PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

Vol. CIII SEPTEMBER 10, 1936 No. 11

"WE *Scalped* OUR PAPER COSTS"

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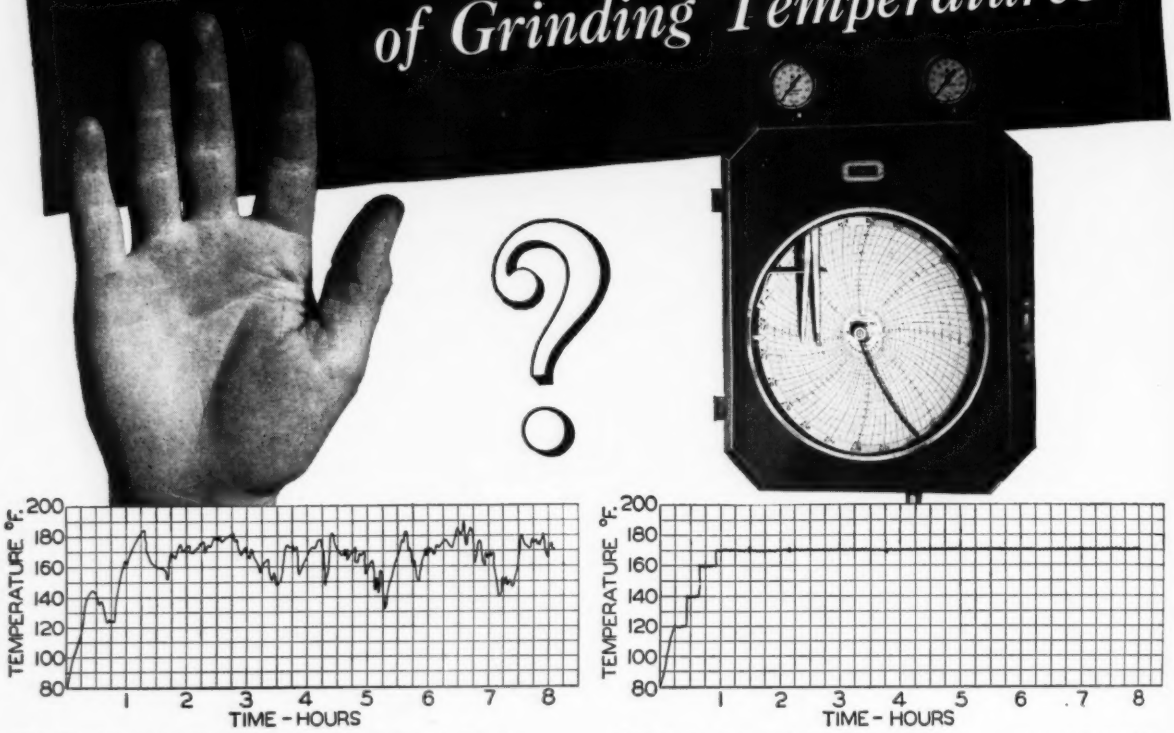

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With Taylor Automatic Control—Grinding temperature is held within an average of plus or minus 1° F. It is easy also to bring stone temperature up gradually after a shutdown.

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SIXTY-FIFTH YEAR

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

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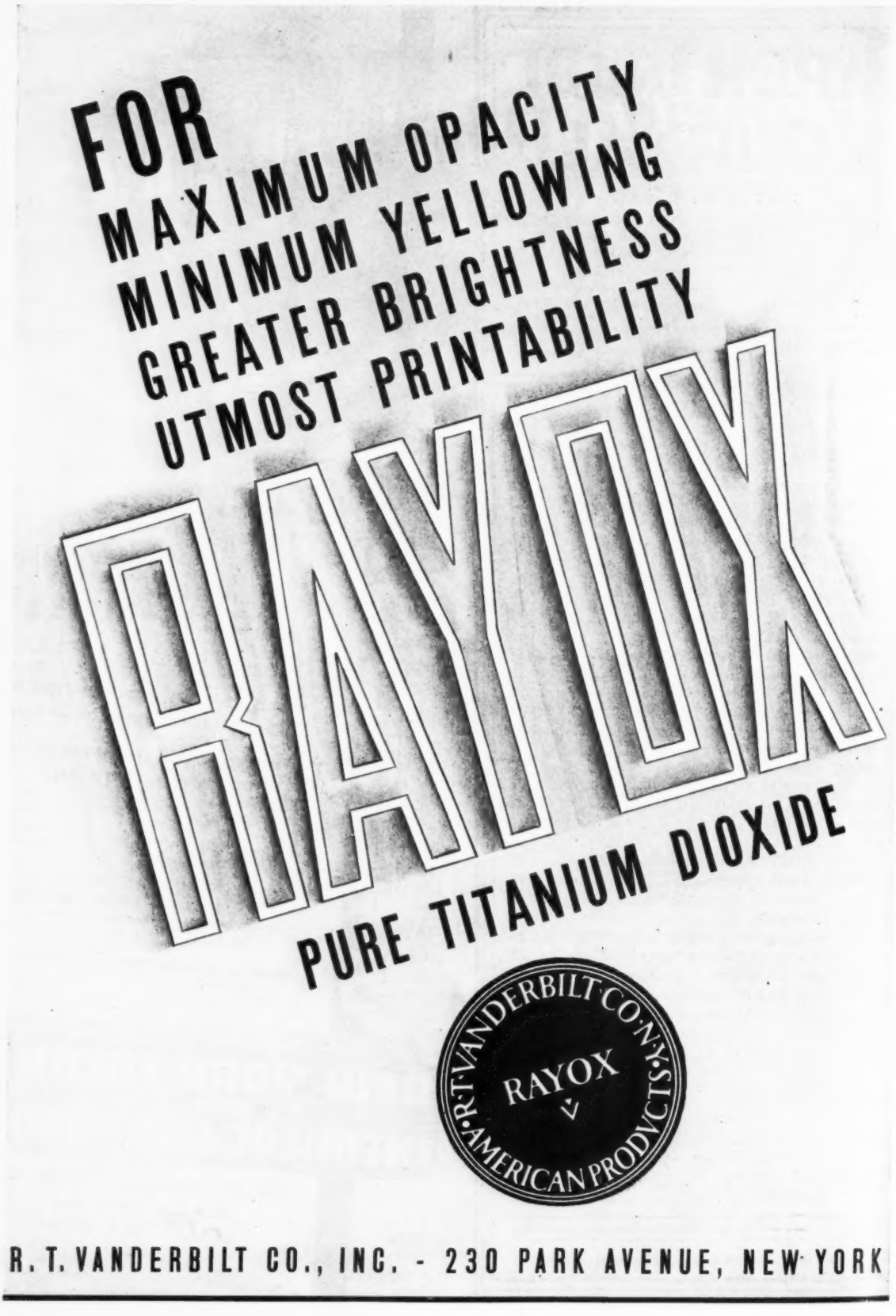
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PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

PAPER

SIXTY-FIFTH YEAR

PAPER

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United Paperboard Receivers to be Discharged

This Action is Expected Before End of September of Current Year—Company Earned $56,438.65 for Period Ending May 30 and Board of Directors are Desirous of Paying a Dividend of 4 Per Cent on Preferred Stock.

In submitting the financial statement of the United Paperboard Company, Inc., as of May 30, 1936, Sidney Mitchell, president of the company, says:

"The Chancery Court of the State of New Jersey discharged the primary receivers of the United Paperboard Company, Inc., as of December 28, 1935, and directed the reconveyance of the assets held by such receivers to the company on that date, but retained jurisdiction over the property of United Paperboard Company, Inc., until all debts and accounts payable by the receivers were paid. All things contained in said order have been compiled with and the United Paperboard Company, Inc., is now, and for some time past has been free from the control of the Chancery Court of New Jersey and the receivers appointed by said Court.

"Ancillary receivers were appointed by the District Court of the United States for the Southern District of New York. We believe that the ancillary receivers will be discharged before the end of September.

"The financial statement submitted herewith is for the period commencing December 28, 1935 to the end of our fiscal year on May 30, 1936.

"In the balance sheet there is an item of $26,307.62 captioned 'Due from ancillary receivers of the United Paperboard Company, Inc.' This amount will probably be reduced somewhat, inasmuch as the court appointing the ancillary receivers will probably award allowances to the receivers, appraisers and attorneys who took part in the proceedings, for their services and expenses which will be deducted from this amount.

Six Mills Sold

"In 1933, the receivers sold our mills at Whippany, N. J., Eaton, Ind., Mt. Carmel, Ill., Wabash, Ind., Rockport, Ind. and Peoria, Ill.

"Each contract of sale provided for installment payments over a period of eight years and purchasers were entitled to substantial discounts on the balances in the event that they anticipated final payments. The purchasers of the three first mentioned mills took advantage of the discounts permitted and have paid the sum of $696,632.03 in full payment of the purchase price thereof, including the unpaid balance of $50,000.00 due under the sale of the Whippany Mill shown in the balance sheet of May 30, 1936.

"The receipts from the sales or leases of the Wabash, Peoria and Rockport Mills amounted to $547,203.04 on May 30, 1936, the end of our fiscal year. Each agreement contains a provision that the purchaser may surrender the property agreed to be purchased by forfeiting the payments made to the date of the surrender thereof.

Mills Retained

"The company has retained its mills at Lockport, N. Y., Thomson, N. Y., Urbana, Ohio, and Benton Falls, Me.

"The mills sold or leased as above set forth had a daily capacity of about 375 tons. The mills retained, including the box plant at Thomson, N. Y., has a daily capacity of about 350 tons.

"There have been practically no replacements of any importance made at the mills during the past four years. Replacements and improvements are much needed in the interest of efficiency and lower costs. The mill at Urbana requires considerably new machinery in both the beater and the boiler rooms. This mill was built on land leased from the Erie Railroad in 1894. The receivers were successful in purchasing the land whereon the mill stands from the Erie Railroad for the sum of $2,603.22. Since the discharge of the receivers the company has spent some money toward the improvement of this mill, and more is necessary.

"Last spring the dam in the Sebasticook River at the company's mill at Benton Falls, Maine, was demolished by ice during a severe flood. The dam was used chiefly for the purpose of providing the mill with power to grind pulpwood. This dam has not been rebuilt inasmuch as practically all the pulp which we now use is imported from Scandinavian countries at a price considerably lower than that charged for domestic pulp.

Mill Dismantled Because of High Taxes

"The United Paperboard Company, Inc., at one time had about 40 per cent of its assets invested in eight pulpwood mills; one sulphite mill and three ground wood mills, Lockport, N. Y., one ground wood mill, Thomson, N. Y., one ground wood mill, Benton Falls, Me., one soda pulp mill and one ground wood mill, Fairfield, Me. All of these mills have been abandoned during the past few years and dismantled because of the high taxes levied against them.

(Continued on page 15)

Thunder Bay Mill May Start Second Machine

G. T. Clarkson, Receiver and Manager of Abitibi Power and Paper Co., Hopes to Place Large Fourdrinier Machine Into Operation Shortly At Port Arthur, Ont., Providing Demand for Newsprint Paper Continues.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 8, 1936—There is a possibility that the second machine of the Thunder Bay Paper Company, at Port Arthur, will be started. Mayor Cox stated that in an interview with G. T. Clarkson, of Toronto, receiver and manager of the Abitibi Power and Paper Company that gentleman said if the present demand for newsprint continues, he hoped to be able to start the second Fourdrinier. The company would purchase considerable wood for the plant this year.

Pulpwood Situation

Thompson-Heyland Lumber Ltd., Toronto, who are extensive dealers in pulpwood, report that the outlook for the coming season is very fair, and that the amount of wood peeled during the summer will equal that of a year ago. There is very little speculative cutting now, and contractors, settlers and others only take out such quantities as market conditions call for. Shipments from points of production to the mills are much more regular than they used to be, and the industry on the whole is on a more stable foundation. While values show a tendency to firmness, it cannot be said that there has been any increase in the prices paid, but several adjustments have taken place on the figures named in all contracts based on freight rates, point of production, etc.

Thompson-Heyland Lumber have contracted for about 75,000 cords to be delivered during the coming season in the Niagara Peninsula, Cornwall, New York State and other points. Peeled spruce and balsam have been commanding from $5.50 to $7.50 per cord, according to haulage charges, and peeled poplar has been sold from around $4.00 to $4.50 per cord. The demand for poplar is not as brisk at present as it was some time ago. Labor conditions have been satisfactory and the pulpwood situation in Northern Ontario generally is better than it has been at any period during the last five years.

C. W. Cox, M.L.A., who is Mayor of Port Arthur, Ont., recently returned home after an interview with the Hon. N. F. Hepburn, Premier of Ontario. Mayor Cox made definite announcement that the government's policy of permitting the export of pulpwood would be continued. He said the reduction in Crown dues on balsam, jackpine and other cheaper grades of wood, under consideration by the government, would mean a considerable increase in business in Port Arthur. It would be of particular benefit to settlers who have sold their spruce but have considerable other wood on their property. If the pulpwood dues are reduced, it is expected that 20,000 cords of jackpine will be brought out this winter. The Central Paper Company purchased 1,500 cords during the summer as an experiment.

News of the Industry

A survey of Ontario wage and hour codes for the first year of their operation shows that they have worked out very well, according to Lewis Fine, Industrial Standards officer. At present 38 schedules are in force, four of which are province-wide. With only two exceptions all have applied for renewal. The pulpwood cutting industry in the Thunder Bay area, where 4,500 people are employed, has already asked for renewal. No labor trouble has taken place in that territory since the schedule came into operation. Applications for renewal of schedules are coming in from both employers and employees.

J. Falconer, resident manager of the Powell River Company, Powell River, B.C., has been appointed comptroller of the organization in Vancouver. D. A. Evans, who was recently appointed assistant-manager, succeeds Mr. Falconer. The changes follow the recent resignation of A. E. McMaster, vice-president and general manager of the company.

Paper Firms File Registrations

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 9, 1936—A.P.W. Paper Company, Inc., Albany, N. Y., has filed a registration statement with the Securities & Exchange Commission covering $125,600 of 3½ per cent ten year registered convertible notes, due August 1, 1946 and 25,120 shares of no par value common stock to be reserved for conversion of the notes.

The notes are convertible at the option of the holder on and after August 1, 1937 on the basis of 25 shares of common stock for each $100 of notes or 20 shares of Class A stock of A.P.W. Properties, Inc., for each $100 of notes. The notes are to be offered to stockholders of record July 31, 1936 in the ratio of $100 principal amount of each 100 shares held. American Public Welfare Trust, of Babson Park, Mass., the underwriter, will purchase all notes not subscribed for the stockholders. The net proceeds from the sale of the notes are to be used to complete the construction and equipment of a new building.

The Paper Sales Company of Detroit, Inc., of Detroit, Mich., has also filed a registration statement covering 600,000 shares of $1 par value common stock to be offered at par. The net proceeds are to be applied to the payment of plant and equipment, improvement of plant and purchase of additional equipment, and to working capital.

Wood Flong Corp. Increases Wages

[FROM OUR REGULAR CORRESPONDENT]

HOOSICK FALLS, N. Y., September 8, 1936—The Wood Flong Corporation has announced a five to fifteen per cent increase in wages over a ten-year period, affecting about 75 per cent of the employees. The new schedule not only places employees who have been with the concern but a year or less on a more equal basis but materially benefits the long term service men. About 100 employees are employed by the company at present. The announcement was made by Jackson Townsend, president.

Melvin Box Co. Chartered

[FROM OUR REGULAR CORRESPONDENT]

HAVERHILL, Mass., September 7, 1936—The Melvin Box Company, Inc., paper and cardboard boxes, has been incorporated with a capital of 200 common shares having no par value. Melvin M. Starensier, 103 Webster street, is president and treasurer. The other incorporators are Moses Shyavitz and Samuel Karlitz.

Demand for Paper Very Persistent in Chicago

Kraft Paper Market, In Particular, Exhibiting Strong Undertone—Sulphite Bond Displays Greater Strength—Book and Cover Papers Share Upward Trend—Outlook for Newsprint Promising—Paper Board Continues Active

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., September 8, 1936—The Chicago paper market seems to have held a successful "Fall Opening." Reports from virtually all market centers locally indicate that business is very good for this time of year and certainly improved over any similar period during the depression. Key markets are reported as surging ahead with improved demand and the paper industry can be said to be getting its share of the current surprising general improvement.

The kraft market, considered by many as the bellwether of the paper industry as the forecaster of future business, continues to be the headliner with reports indicating that mills are running at full capacity and that there are numerous reports of mills falling behind schedule. Another market which has, in the past, afforded some anxiety and perplexity, has reversed its position and now shows genuine improvement. Reference is to the sulphite bond market which is said to be strong and in a better position than for quite awhile—particularly in what might be termed the "slack season."

The other markets, including books and covers, are reported to have shared in the current upturn in demand and resultant underlying market strength. Groundwoods were entering the Fall period in better shape than for some time past while newsprint executives were more heartened over the outlook. The board market showed continued strength. Waste papers reflected the market situation.

Paper Merchants to Convene

Chicago paper executives are expecting the attendance at the Chicago meeting of the National Paper Trade Association to break quite a few records. The meeting, to be held September 21, 22 and 23 at the Drake Hotel, has for its major drawing point the troublesome Robinson-Patman Act and the program of the Association with respect to merchant and manufacturer cooperation in working out the various provisions. The interpretations of the Act by J. K. Javits, counsel for the association, are expected to be highlights of the session. Concentrated into the abbreviated three day session will be the usual annual meetings of the various groups which make up the effective association. Included among these is the Paper and Twine Club which, according to Frank Mainers, chairman, will be held on September 23 with election of officers as a feature. The business sessions will be crowded into the busy golf outing at Olympia Fields the day following the close of the main association proceedings.

Annual Golf Outing

The Midwest Division of the Salesmen's Association of the Paper Industry has found it necessary to move the date of its annual golf outing up one day to conform to the shorter program of the National Paper Trade Association. Formerly scheduled for September 25, the outing will now definitely be held on September 24 at Olympia Fields, on Chicago's far southwest side.

The semi-final outing, held at Westmoreland on August 21, drew an attendance of 60 members and guests with Burt Fisher, golf chairman, expressing satisfaction at the number in view of the many vacations. Prize winners were as follows: Low gross, Rod Hanson; blind bogey, Greg Frelinger; low net, 17 and under, Ralph Burnett; low net, 18 handicap and over, Roy Weeks; low putts, E. E. Long; low gross, par 3 holes, Courtney Reeves; low gross, par 5 holes, Don Wall; low net, first nine, I. McHenry; low net, second nine, George Gibson; low putts, first nine, Bob Whitelaw; low putts, second nine, Phil Howard. The high gross foursome was composed by E. V. Buchanan, John Loughlin, Jim Coy and Ralph Loue. Low net foursome winners were Rube Swan, H. Gugler, I. McHenry, Alex Shennon and low putt foursome winners, Lyn Lake, C. W. Kirtley, Dick Cook and Bob Whitelaw.

News of the Industry

Two former officers of the W. E. Wroe Paper Company which recently merged with Bradner Smith & Co., have just been appointed vice-presidents of the latter organization. They are H. Van Petter, formerly president of W. E. Wroe, and W. L. Shea, formerly vice-president and treasurer.

Included in the new lines being featured by Chicago jobbers are five new Messinger items including Bronze Cover; Facility Index. Fraopaque; Zamora Cover and Rising Parchment. Other companies merchandising new lines are Dwight Bros. Paper Company with Arrowhead Safety, made by the Gilbert Paper Company; Allen Paper Company, Millers Falls Opaque, made by the Millers Falls Paper Company; Chicago Paper Company with Falcon Coated Blanks; Champion Paper Company and Old Tavern Metal, made by the McLaurin Jones Company. The J. W. Butler Paper Company is merchandising the Beckett Paper Company's Tweed Text and Basket Weave Safety manufactured by George La Monte.

The Swigart Paper Company this week mailed out price list changes covering bristols, blanks, cardboards, coated blanks, coated postcard and translucent bristol. In each case, except for the two sheets to be included in the Swigart regular price book, the price listings were quoted on samples of the paper under discussion—making not only an informatory but merchandising record out of the mailing.

Through its Chicago distributors, Dwight Bros. Paper Company, the Gilbert Paper Company of Menasha, Wis., has issued an attractive folder on Resource Bond printed on Resource Bond, substance 20 with metallic inks used. "Natural Association" is the title of the folder, which refers to the fact that Resource Bond is immediately associated with "gratification" and leads the reader into a discussion of 50 per cent rag content with "its position as an accepted paper therefore only natural."

To Supply All New Zealand's Wrapping

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 9, 1936—At the recent annual meeting of New Zealand Paper Mills of Dunedin, the announcement was made that with the addition of its new papermaking machine, the company was in a position to supply the whole of the wrapping paper needs of the Dominion, according to a report from Vice Consul Walter W. Orebaugh, Wellington.

Pulpwood Movement from Canada in Full Swing

Fifty Thousand Cords Rafted Across Lake Superior to Ashland, Wis., for Consolidated Water Power and Paper Co. — Same Port Also Receiving 8,500 Cords in Six Cargoes Shipped On Great Lakes Steamers for Nekoosa.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 8, 1936 — Increasing amounts of pulpwood are being moved from Canadian sources to Wisconsin via steamers of the Great Lakes. Nekoosa-Edwards Paper Company, Nekoosa, Wis., is now using this method. The company has made arrangements through the Oscar Styffe Timber Operations, Ltd., Port Arthur, Ontario, to ship 8,500 cords in six cargoes this fall.

These shipments will be delivered to Ashland, Wis., on Lake Superior, and will be reloaded on freight cars for rail shipment to the mill at the Clarkson Coal and Dock Company's hoists. A crew of sixty men has been engaged to handle the wood at the docks.

Approximately 50,000 cords of pulp-wood were rafted across Lake Superior to Ashland by the Newaygo Tug Line for the Consolidated Water Power and Paper Company. The Ashland port also has received two cargoes of commercial pulp from Sweden for the Marathon Paper Mills Company's tissue mill located at that city. Three more are expected from Sweden before navigation closes.

More Storage Reservoirs Planned

Paper mills of the Fox River Valley that have been obliged to use steam power and have been obliged to order brief shutdowns because of low water have received the encouraging news that the War Department at Washington is about ready to make a survey of the upper water sources preparatory to the building of a series of storage reservoirs. These will conserve water at flood stages and release it during the summer drought periods.

A bill has passed both houses of Congress and has been signed by the President authorizing the surveys. While no funds were appropriated, the War Department intends to proceed with the work with monies now available.

Officers of the Association for the Relief of High Water have been conferring with PWA authorities in Madison with the view of starting work at once on the first of the series of reservoirs. The plans contemplate construction of a dam at Lily, on the Wolf river, the main tributary supplying the Fox River.

Recent heavy rains are improving the water supply situation. The Fox River Paper Company, Appleton, Wis., was obliged to shut down several times because of lack of sufficient water for the filters. This mill, the Patten Paper Company, Ltd., and others have been using steam power for some time because of the low river level.

The Thilmany Pulp and Paper Company, Kaukauna, Wis., had its production interrupted for an entire night when lightning struck a cable at the sulphate plant, shearing the wires. Transformers were ruined and the electrical system damaged. Both light and power were shut off until crews could make temporary repairs.

Most of the work has been completed on the fill for a new highway at the site of the big new dam on the Eau Pleine River, in Marathon County, Wis. The road had to be relocated prior to building the vast reservoir for the Wisconsin Valley Improvement Company, to impound waters for the Wisconsin River.

The G. W. Condon Company, Omaha, Neb., has a large crew at work, using considerable heavy machinery to move the dirt to the new roadway, and to scoop out the reservoir basin. The relocation is about a mile long. The dam will be one of the largest earth fill structures in the North Central states.

Members of the Rotary club at Wisconsin Rapids, Wis., were taken on a tour of the project by W. F. Thiele and Tom Utegaard, engineers of the Consolidated Water Power and Paper Company who conceived the idea of the series of storage reservoirs to be built to complete the undertaking. After inspecting the area and watching the machinery at work, the visitors sat down to a dinner, and heard explanations by the engineers, E. P. Gleason, of the Nekoosa-Edwards Paper Company, E. B. Redford, of the Consolidated Company, and Roy Cromwell, of the Condon Company.

News of the Industry

Allis Chalmers Manufacturing Company, Milwaukee, Wis., has increased its dividend on common stock to 37½ cents a share, payable September 30. The June 30th dividend was 25 cents. The company also announced its plans to redeem $5,000,000 of its four per cent convertible debentures at 103 on October 5. The debentures were floated last November and $15,000,000 of them were outstanding at the end of the year. Since then part of the issue has been converted into stock.

Marathon Paper Mills Company, Rothschild, Wis., is the first in the state to pay a worker benefits under the Wisconsin Unemployment Compensation Act, which went into effect July 1. Raymond Senefsky received $2.45 from the unemployment fund, remitted by the Wisconsin Industrial Commission from the company's payroll percentage on deposit. He was employed for two days beyond July 1, and the payment represents one-fourth of the monthly benefits he would enjoy if he had been at work for a longer period subsequent to July 1.

The Wisconsin-Michigan District Council of Paper and Pulp Converting Plant Unions will hold a quarterly meeting September 13 at Appleton, Wis. About 100 delegates are expected from 27 locals in this area. Labor problems and wages will be discussed. Thomas Heiss, Appleton, is president.

Although denied a refund of approximately $7,500 on its 1935 taxes, the Bergstrom Paper Company, Neenah, Wis., has also protested its 1936 taxes. The city has assessed the property at $950,000, while the company declares the value does not exceed $600,000. In testimony before the board of review, John Bergstrom, president, testified that the company had lost money from 1932 to 1935, inclusive. He said the Wisconsin Tax Commission had set the depreciated value in 1935 at $795,885 and that the federal agents had set a figure of $717,680. The book value of the plant on May 1, 1936 was $611,269, he testified. E. J. Dempsey, attorney for the company, contended the losses depressed the market value. The testimony was later reviewed by the board of review, and the assessment as made was sustained.

Nineteen students are included in the new class to be admitted to the Institute of Paper Chemistry, Appleton, Wis., this fall. The students will meet September 14 at a lumber camp in northern Michigan to study logging

methods and wood technology. Classes will open September 22 at the Institute.

The First National Bank of Neenah, Wis., built to its present resources of $4,019,441 largely by the paper mills of that city, celebrated its seventy-fifth anniversary on September 1. J. A. Kimberly, one of the founders of the present Kimberly-Clark Corporation, was one of the organizers and original directors. Serving on the board at the present time are men prominent in the paper industry, including C. A. Babcock, J. N. Bergstrom, D. K. Brown, C. B. Clark, Ernst Mahler and F. J. Sensenbrenner.

F. E. Saecker, who has been president of the Appleton Machine Company, Appleton, Wis., for more than fifty years, observed his eighty-second birthday anniversary last week. Many friends and relatives gathered at his home to celebrate the event.

New Action in Miami Valley Coated Case

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, September 8, 1936—A new action to throw the Miami Valley Coated Paper Company of Franklin, into receivership was entered in the United States District court, by James Leyes, Detroit, Mich., who says he is the holder of eight $1,000 first mortgage serial, 6 per cent gold bonds, executed by the company on November 1, 1927, upon which the defendant company allegedly is in default of interest since May 1, 1932.

In a suit filed in the same court the previous Thursday, Mr. Leyes included as a defendant the Ohio Citizens Trust Company, of Toledo, Ohio, as trustee under a mortgage executed by the Miami Valley company to secure $70,000 in first mortgage gold bonds, of which his bonds are a part.

A hearing last week before United States District Judge Mell G. Underwood, at Columbus, Ohio, upon Leyes' application for the appointment of receivers to take over the property of the defendant, resulted in a ruling to the effect that the suit could not be maintained because the trust company at Toledo, being an indispensable party, would of necessity become the complainant and thereby destroy the diversity of citizenship required to give the Federal court jurisdiction.

In the bill of complaint entered on September 2, which is to reopen the one filed previously, Leyes sets up a plea for recovery of judgment for $8,240, with interest at 7 per cent from November 1, 1932, allegedly due on eight bonds held by him; for a determination of the rights of himself and all other bondholder creditors of the defendant company; for the appointment of receivers to operate the business so that a sale will enable creditors to realize on their claims in full, and for the appointment of a Master to take an accounting to determine the validity, priority and amounts of all claims against the company.

It is understood Judge Underwood has set the hearing date at 9 A. M. Monday on the new application for the appointment of Receivers. The hearing will be held in the Federal court at Columbus.

Holyoke Water Situation Improves

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 8, 1936—Labor Day was marked as usual by an almost entire cessation of manufacturing operations in the city. This, and considerable rainfall over the northern area caused the river to flow over the flash boards today assuring probably a full five days run without restrictions. The fall rains are about due now and the outlook is for use of unrestricted water for some months at least.

RECEIVERS TO BE DISCHARGED

(Continued from page 11)

"Practically the entire output of these pulp mills was consumed by the United Paperboard Company, Inc., in the manufacture of paperboard. The price of foreign pulps has continually declined until now it is so far below the costs of the United Paperboard Company, Inc., in manufacturing it that the operation of its pulpwood mills is impractical.

"A number of years ago one Frank S. Sawyer brought suit against the United Paperboard Company, Inc., in the United States District Court in Maine. Sawyer contended that he had delivered pulpwood to the United Paperboard Company, Inc., of the value of $50,000.00 and that the United Paperboard Company, Inc., had not paid him for it. The court referred his claim to a referee for the purpose of hearing the same and determining the amount due. Last month we received word from our attorneys that the referee had decided in the company's favor and that nothing is due Sawyer. We do not know whether an appeal will be taken in the matter.

"During the receivership the receivers instituted proceedings for a reduction in the taxes levied by the City of Lockport against the company's mill located there. Those appeals embrace the years 1933, 1934 and 1935. They are still pending and undetermined. Your company followed the same procedure this year and has appealed from the assessments levied for the year 1936.

"The taxing authorities in the State of Ohio have increased the assessed valuations of both the personal property and real property belonging to the company at Urbana, Ohio. Your company was successful in satisfactorily adjusting the personal property taxes; the real estate taxes, however, will not come on for hearing until some time in December. The reduction will be prosecuted vigorously.

Peak Tonnage in 1929

"The peak tonnage of the United Paperboard Company, Inc., was in its fiscal year ending May, 1929. From that time business continued to decline from scarcity of orders, abandonment of mills, and the sales or leases of mills. The company is now manufacturing tonnage equal to about 46 per cent of what it manufactured in 1929.

"The company has earned the sum of $56,438.65 for the period ending May 30, 1936, and the Board of Directors is desirous of paying a dividend of 4 per cent on the preferred stock.

"You will note by the balance sheet that the total assets of the company have a sound value of $4,074,147.08. We do not believe, under the circumstances, it is right to continue with a paper capital of $13,500,000.00. We believe that the par value of our stock should be reduced in conformity with the true facts. The Board of Directors has passed a resolution recommending the reduction of the par value of the common stock and you will receive a copy of the same within the near future."

Stevens & Thompson Elect Officers

[FROM OUR REGULAR CORRESPONDENT]

HOOSICK FALLS, N. Y., September 8, 1936—The annual election of officers of the Stevens & Thompson Paper Company was held this week at a meeting of stockholders. Frank L. Stevens was elected chairman of the board of directors; Howard B. Thompson, president and treasurer; Fred N. Stevens and C. Alfred Wagner, vice-presidents; B. W. Sudgen, secretary. John W. Bright, was elected to the board of directors to fill the vacancy caused by the recent death of William F. Seber, of Troy.

Factoring or Financial Facilities For The Paper Industry

By Frederick M. Leonard[1]

The use of paper is largely the measure of a peoples' enlightened advancement. Without paper in abundance, the proper conduct of government, industry, commerce and banking and the forward march of education would be severely crippled. The growth in number and size of the paper mills in the United States—the advancement in perfection of plant equipment—the high type of executive and production personnel—the refinement of the product—and the market astuteness of the merchants all display a very keen appreciation of the importance of the product and its usefulness to the nation. Like all other businesses, paper has passed through a 5-year period of kaleidoscopic change. The industry, however, has always been forward-looking, has diligently sought to discover new facts and adaptations and to apply them to its daily routine. Fortunately the search has led some of the leaders of the trade to a closer intimacy with the subject at hand. They have found that factors are human beings whose success depends solely upon the advancement of the interests of those whom they serve. They have also discovered that factors render a service at an almost negligible cost when balanced against the promotional facilities afforded.

Banks

If one wishes to survey the measure of financial stability now obtaining, let him take a few figures from the usual weekly reports of the Federal Reserve System, coupled with those of the reporting member banks. He will see that deposits have reached a level almost comparable to 1929. None will deny that the banks have an abundance of cash at the present time, but they seemingly cannot, or are not able to use it for commercial business. They must keep liquid. This is not a note of censure as the banks have their own real problems and few are making large returns upon their capital. Commercial loans therefore stand at a minimum although business as ever needs cash. Moreover a careful analysis of the problem will clearly show that ordinary commercial bank loans are not the present need of many industries. The need is for something which approximates permanent investment, or capital investment. This the banks are not equipped to do, and industry must have some place to go when the bank stops. The banks quite naturally discourage capital loans but it is at this point that the factor appears to advantage and thousands of corporations, unable to secure banking accommodation readily testify to the silent partnership of factoring, which has brought them out of the rut into rehabilitation.

Other Industries

For many decades in this country, the textile industry, comprising cotton, wool, rayon and silk have understood thoroughly the advantages of factoring and made use of it and this has made this industry grow by leaps and bounds. More recently the automobile industry, home appliance industry and productive machinery have made great advances because they have used a modified form of factoring. Mills and jobbers must have someone to take up the money slack when the banks stop at a limit. The financial stability of the textile industry is assured. Their continued expansion is everywhere admitted and with freedom unhampered, there has been a profitable enlargement.

The paper industry from a factoring standpoint is ideal, although little or nothing is known in the industry regarding it. The rejects are few, the merchandise has a good re-sale value, even under replevin,—the unit of sale is fixed—and the markets are broad. These facts permit most reasonable rates. From the mill and jobbing standpoint all elements are in their favor, thus making paper a most logical field.

Benefits of Factoring

Statistics show that at least $1,000,000,000 of sales will be factored this year. Unless it were a mutually profitable transaction, this volume could not be obtained, neither could it be maintained, year after year in growing amounts. The advantages are many, as follows:

1. Puts the company in a liquid cash position as soon as it makes sales.
2. Affords the company various opportunities for making larger savings by taking cash discounts on purchases and through the purchase by cash of necessary raw materials. This offsets in a very large degree the small cost of factoring.
3. Provides elasticity in the expansion of sales. Thus overhead is reduced.
4. Cash money provided eliminates worry of meeting payroll.
5. Develops a substantial increase in the net profits through the expansion of the business.
6. Cash is available at all times and not at certain seasons, in fact, cash is available just when it is most needed.
7. Permits concentration on production and sales.

Process of Factoring

Though practically unknown to the paper industry, those advanced minds who have studied the subject find that there is nothing complicated in the process of factoring, or in other words it is readily understood, reduced to the simplest of details, it is:

a) The buying outright on a yearly contract of all accounts receivable as created.
b) The assumption of all credit risks, thus eliminating the cost by the mill of the maintenance of a complete credit department.
c) As soon as sales are made duplicates of invoices and evidence of delivery are turned over to the factor, against which the mill may draw in cash up to 90 per cent of the net sales.

Conclusion

It has been well asked "Is money everything or isn't it?" This can be answered succinctly: Money cannot do everything. It cannot create business wisdom, forethought and sagacity; but money handled under the supervision of these three, transforms, rejuvenates and quickens the tempo of any business, and many an ultra-conservative unalive to this new opportunity now coming to the front will in a short time find his company so far in the rear that the

[1] The author is a graduate of Yale University in the class of 1899, has been 35 years in the paper industry and is president of the Graphic Arts Board of Trade.

market and customers which he once thought were his by right, are aligned with the progressives.

The paper trade cannot stand still. It has been through the throes of cost finding, efficiency engineers, standardization, affiliations and consolidations, all more or less to its benefit, but in the year 1936 it finds itself in spots thwarted by an anemic condition of lack of money with which to go forward. The question then naturally arises, why not profit by the century-old experiences of other industries. The principles involved in factoring have not only increased the net profits for the textile industry but have also caused it to grow to tremendous importance. A new mental attitude evidently is required. There is nothing new under the sun but often a plan of action or development of management while well known to and freely accepted by one experienced group, may seem so new to the careless thinker that, it fails to receive the consideration merited. This is no day for the one track nor for the closed mind. Many want to do business at the same old stand and in the same old way, though the ox-cart has vanished and even the stream-lined train is being supplanted by the air route.

America's pulse is fast beating. It has the urge for larger business—greater net profits. The paper industry cannot afford therefore to close its mind to this or any other proven worthwhile development without careful consideration. This new trend of business planning is coming to the front more quickly than is headed by many executives, for paper differs little from textiles in their ratio of profit-rate of turn-over—and competitive nature.

Boston Paper Industry News

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 7, 1936—Marvellum's Transel, a printed and embossed transparent cellulose film, a new product of the Marvellum Company, Holyoke, Mass., is being handled by Henry L. Goodman, a representative of that company. This paper, made in a number of attractive designs, is ideal for greeting cards, fly-leaves and many other specialties and can be used as a gift wrap or box wrap.

Henry W. Ford, manager of the fine paper specialty department of the Andrews Paper Company, is anticipating a trip to several cities towards the South very shortly.

Horace Binney Sargent, 3rd, of E. Butterworth & Co., Inc., has returned from a two weeks vacation in Western Massachusetts, New York State and Vermont.

Gordon E. Emerson, of the same company, has gone on a two weeks vacation, including New Hampshire and Vermont.

George C. Massabini, a packer of rags in Alexandria, Egypt, called on the Boston trade last week.

B. F. Perkins & Son Have Outing

Mechanical experts and heads of various departments of B. F. Perkins & Son, Inc. and the affiliated American Tissue Mills gathered for an annual outing Saturday, August 29. The outing was held on the spacious grounds owned by the company at Forge Pond, Granby, Mass. Owing to unfavorable weather, the Perkins Lodge and a large tent erected on the lawn were used for the festivities, which included an old fashioned baked chicken dinner.

A unique feature of the gathering was broadcasting from the dining tent through sound apparatus carried through the famous American Tissue Mills circus truck. A high note of the after-dinner exercises was the general tone of the speeches which denoted a heavy demand for products of both companies.

Readability of Thermometers Improved

Mercury-in-glass industrial thermometers always have been notoriously difficult to read except at very close range and under most favorable lighting conditions. That characteristic not only discouraged frequent readings, but was responsible for many erroneous readings as well. The Taylor Instrument Companies, Rochester, N. Y., claim to have corrected this difficulty in a fundamental manner by a uniquely designed thermometer tube which is extremely easy to read.

This new thermometer tubing, known as BINOC, is described as an outstanding achievement of modern optical science. Advantages of the design include: More than twice the accustomed angle of vision combined with high magnification of the mercury column . . . Binocular vision (i.e., readability with both eyes) at normal or greater than normal distances; whereas it previously was necessary to stoop and squint . . . Triple-lens construction gathers three times as much light and concentrates it behind the mercury column, making the column stand out in sharp relief . . . Confusing empty-bore reflections are eliminated by the scientifically determined lens angle and extended opaque background.

The legibility of these new Taylor Industrial Thermometers is further improved by the bold, black numerals and graduations on the cream-tinted, non-tarnishing scale.

The Taylor line of thermometers of this type will be available in all of the popular straight, angle and handled forms.

Bulletin 99023 which describes this new development may be had on application.

Philadelphia Reports Widening Demand

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 8, 1936—With widening of demand among paper dealers and mills there is every encouragement given to the industry in the outlook for the fall. In the new catalogs being issued by paper houses in this area, it is noticed that prices as a whole are holding firm particularly on book, cover and ledged stock.

Manufacturers of fine papers and specialties report growing orders as September advances with a decided seasonal betterment on the part of consumers of small lots to meet-requirements which are presented in the day to day needs of customers.

There is betterment shown in the market for paper stock of the higher grades and for some of the rag supplies, which indicates mill stocking and broadening of operations among manufacturers. Prices are stiffening and dealers are beginning to feel this pulsating demand, for while heretofore there was a surplus of old news stock made possible by collections from push-cart vendors, for some unknown reason these vendors are now conspicuous by their absence, thereby creating a scarcity of this grade of stock.

Ferry Hallock Company has just leased Building No. 3 of premises southeast-corner Amber and Willard streets for the processing of paper.

Paperboard Industry Runs at 71 Per Cent

Monthly statistics on paperboard, 0.12 of an inch or more in thickness, for June, compared with preceding months, have been released by Director William J. Austin, Bureau of the Census, Department of Commerce, and are presented in the following tables. The statistics for June, 1936, were compiled from data furnished by the National Paperboard Association from reports of members and by manufacturers reporting direct to this Bureau.

Production for July

The production of paperboard for July, 1936, amounted to 299,033 short tons, or 69.7 per cent of the rated capacity of the mills reporting. The ratio of inch hours of operation to rated capacity for July, 1936, was 71.1 per cent, as compared with 70.0 per cent for June, 1936, 60.3 per cent for July, 1935, and 53.0 per cent for July, 1934.

TABLE I.
INCH HOURS OPERATED, PRODUCTION, AND ORDERS
(95 MANUFACTURERS)

Year and Month	Operated (Inch hours) (Based on last dyer width) Rated capacity	Operation for month	Per cent of rated capacity	Production (Short tons) Rated capacity	Production during month	Per cent of rated capacity	New orders received during month (short tons)	Unfilled orders, end of month (short tons)
1936								
Jan.	15,251,225	9,963,914	65.3	427,564	270,928	63.4	283,890	94,210
Feb.	14,143,988	9,682,428	68.5	396,354	271,107	68.4	268,843	91,917
Mar.	14,583,725	10,128,474	69.5	411,199	285,257	69.4	290,854	96,202
April	14,627,093	10,452,616	71.5	412,191	294,929	71.6	298,180	99,796
May	14,497,925	10,140,595	69.9	407,729	289,527	71.0	280,899	92,784
June*	14,545,973	10,186,905	70.0	409,510	288,682	70.5	290,098	96,408
July	15,057,386	10,699,561	71.1	429,139	299,033	69.7	304,747	101,557
Total (7 mos.)	102,707,315	71,254,493	69.4	2,893,686	1,999,463	69.1	2,017,511	.....
1935								
Jan.	15,455,578	9,793,592	63.4	416,501	262,026	62.9	273,151	80,987
Feb.	13,636,918	9,308,323	68.3	366,598	251,870	68.7	252,578	84,341
Mar.	14,709,922	10,029,490	68.2	398,949	275,770	69.1	268,360	79,049
April	14,901,848	9,543,895	64.0	402,831	260,851	64.8	255,730	79,296
May	15,498,589	9,615,348	62.0	418,324	262,463	62.7	259,995	80,367
June	14,284,978	9,418,123	65.9	385,742	256,665	66.5	248,656	78,020
July	15,592,118	9,397,786	60.3	423,545	260,207	61.4	259,486	78,241
Total (7 mos.)	104,079,951	67,106,557	64.5	2,812,490	1,829,852	65.1	1,817,956	.....
Aug.	15,592,118	10,450,399	67.0	423,545	291,127	68.7	297,349	86,767
Sept.	14,380,430	10,273,750	71.4	390,840	289,596	74.1	307,103	105,088
Oct.	16,108,039	12,404,641	77.0	434,717	345,596	79.5	381,887	107,074
Nov.	13,598,280	10,526,226	77.4	399,897	294,290	73.6	272,477	88,971
Dec.	14,770,746	8,818,058	59.7	400,139	243,594	60.9	234,753	81,894
Total (Year)	178,529,564	119,579,631	67.0	4,861,628	3,294,055	67.8	3,281,525	.....
1934								
Jan.	14,879,791	8,506,259	57.2	406,760	233,182	57.3	220,554	63,665
Feb.	13,227,743	8,475,759	64.1	355,554	227,140	63.9	238,225	75,759
Mar.	15,135,748	9,844,248	65.0	405,206	263,199	65.0	273,298	86,440
April	14,018,872	9,282,387	66.2	376,756	251,324	66.7	237,539	76,867
May	15,274,886	8,716,342	57.1	409,487	231,107	56.4	235,877	81,293
June	14,847,757	8,528,498	57.4	397,005	228,078	57.4	218,339	73,473
July	14,422,003	7,645,095	53.0	395,518	208,252	52.7	207,352	74,088
Total (7 mos.)	101,806,800	60,998,588	50.9	2,746,286	1,642,282	59.8	1,629,214	.....
Aug.	15,442,025	9,116,133	59.0	428,140	250,931	58.6	251,073	72,386
Sept.	14,323,043	8,935,783	62.4	397,277	243,764	61.4	239,196	73,114
Oct.	15,531,484	9,810,027	63.2	417,150	267,456	64.1	259,557	69,198
Nov.	14,893,816	8,614,549	57.8	396,757	229,754	57.9	220,841	62,537
Dec.	14,803,783	7,726,155	52.2	381,419	205,518	53.9	207,589	65,784
Total (Year)	176,800,951	105,201,235	59.5	4,767,029	2,839,705	59.6	2,807,470	.....

* Revised.

TABLE II
CONSUMPTION AND STOCKS OF WASTE PAPER
(85 MANUFACTURERS)

Year and Month	Consumption of waste paper (short tons) Rated capacity	Consumed during month	Per cent of rated capacity	Stocks of waste paper at plants, end of month [1] (short tons)
1936				
January	370,319	229,064	61.9	216,040
February	343,024	226,216	65.9	193,919
March	356,763	237,601	66.6	204,376
April	356,746	245,566	68.8	204,353
May	356,463	241,895	67.9	213,435
June*	359,359	241,656	67.2	218,330
July	371,692	249,402	67.1	219,042
Total (7 months)	2,514,366	1,671,400	66.5	.....
1935				
January	359,167	210,812	58.7	210,520
February	322,920	211,560	65.5	214,069
March	345,236	231,584	67.1	207,987
April	347,845	217,300	62.5	214,680
May	361,312	219,767	60.8	222,519
June	334,875	213,523	63.8	230,365
July	366,084	217,934	59.5	233,784
Total (7 months)	2,437,439	1,522,480	62.5	.....
August	366,084	246,537	67.3	288,137
September	337,395	244,963	72.6	220,998
October	373,312	288,668	77.3	214,685
November	345,005	246,318	71.4	213,297
December	344,705	196,429	57.0	211,029
Total (Year)	4,203,940	2,745,395	65.3	.....
1934				
January	309,593	173,300	56.0	178,545
February	307,577	180,765	58.8	197,540
March	380,710	229,772	60.4	206,060
April	322,533	197,741	61.3	215,648
May	325,006	176,018	54.2	227,877
June	397,931	207,476	52.1	221,836
July	429,348	228,313	53.2	233,048
Total (7 months)	2,472,698	1,393,385	56.4	.....
August	348,924	208,332	59.7	232,819
September	331,857	207,766	62.6	244,467
October	362,732	230,695	63.6	231,094
November	347,053	196,461	56.6	226,941
December	346,978	173,314	49.9	223,692
Total (Year)	4,210,242	2,409,953	57.2	.....

[1] The collection of data for stocks of waste paper "in transit and unshipped purchases," shown in previous reports, has been discontinued because the figures were regarded as unsatisfactory by the industry.
* Revised.

Paper Demand Better in Boston

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 7, 1936—"Business is better," said a Boston paper man last week, in discussing the situation. These words voice the opinion of many in the trade, although a few noted that they had a rather quiet week. The same man said he felt better in regard to the market than he had at any time and thought that the demand would be "pretty good this fall." The trade generally has had a good summer. In some quarters of the fine paper division business was reported as better than normal, with prospects brighter. Orders for box coverings and fancy papers were received in fair volume. Orders for diplomas are coming in early, partly because of conditions in England. Raw stock is higher than it was last year and another increase in price is expected this fall, a very favorable condition. Wrapping paper merchants as a whole have been doing well for the season of the year. The outlook is good. The box board business was hardly fair in some quarters, but "pretty good" in others. Dealers look for a good volume of orders eventually.

Paper stock was steady and rather active in some lines, although possibly less so on account of the approaching holiday. Mixed papers were unchanged in price, but still in good demand. The call for old newspapers continued, the price increasing to a range of .40 @ .42½ from a previous flat .40. Other grades of old papers were unaltered in value. There was more demand for foreign and domestic manila rope. Foreign manila rope advanced to 2.40 @ 2.50 from 2.35 @ 2.45 and domestic manila rope to 2.50 from 2.25. Bagging generally is becoming stronger, but as yet there are no price changes. New domestic rags continued firm. Under old domestic rags, more call for roofing stock developed, resulting in a rise of prices. The No. 1 grade advanced to 1.45 @ 1.50 from 1.35 @ 1.50, No. 2 to 1.25 @ 1.35 from 1.20 @ 1.25 and the No. 3 grade to 1.15 @ 1.25 from 1.15.

The need for foreign rags resulted in more buying last week, in spite of the high prices, with purchases largely confined to dark cottons.

IT COSTS SO LITTLE

to make your paper really clean

If there's any doubt in your mind as to the small difference in screening cost per ton between paper that is really clean and paper that isn't clean enough to meet today's competition, we'd like the chance to straighten it out. We feel certain we can convince you that the cost of the right Bird Screen installation is insignificant compared with the resulting benefits. Are you willing to be shown?

BIRD MACHINE COMPANY · SOUTH WALPOLE, MASSACHUSETTS

BIRD SCREENS

YOU CAN MAKE MORE MONEY WITH NEW BIRD MACHINERY

Submits Only Bid For Stamped Envelopes

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, September 8, 1936.— That the International Envelope Corporation will retain the contract for the next four years, and that Miami Valley paper mills will continue to supply the paper, in all probability for the continuation of the contract, was evidenced this week when the Corporation submitted the only bid at Washington, D. C., according to the announcement of W. W. Barre, Government agent located in Dayton.

The International Envelope Corporation's bid was kept a secret but it is believed to have been on a par with previous bids. The Corporation occupies extensive quarters at Second and Front streets, occupying also the old mill establishment of the former Mead Paper Company here, and has designed much of the special machinery required for the operation of such a plant.

All stamped envelopes are furnished to postoffices throughout the country from this point, under the supervision of the Postoffice Department in Washington. Approximately $10,000,000 to $12,000,000 is involved in the contract which becomes effective January 1 next.

In the past contracts for this work in Dayton were drawn up July 1, so that on this date next year Government stamped envelopes and newspaper wrappers will have been printed in this city for 30 years.

Continuation of the contract gives assurance of the employment of 600 or more persons at the plant, the size of the force varying somewhat with the demand for stamped envelopes. During the depression this demand was considerably reduced but just now the Corporation's plant is turning out a large quantity of envelopes.

Mr. Barre, the Government agent, has been here for 30 years in charge of the work. John J. O'Connell, general manager, has been with the contract company since envelopes were first printed here. Many of the employees have been with the concern from the first, hence the industry is distinctly Daytonian.

The Aetna paper mills in Dayton, the Maxwell plant at Franklin and other firms are understood to have had much to do with the supplying of the paper for the envelopes and wrappers. Hence, the closing or renewing of the contract means much not only to Dayton but the Miami Valley in general, not to mention the importance of the contract from a national viewpoint.

Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 9, 1936—The Government Printing Office has received the following bids for 134,500 pounds (500,000 sheets) of single coated book paper; Whitaker Paper Company, 6.69c per pound; Reese & Reese, Inc., 6.19 cents; John F. Post, Inc., 6.69 cents; Stanford Paper Company, 6.69 cents; R. P. Andrews Paper Company, 6.69 cents; Barton, Duer & Koch Paper Company, 6.69 cents; Bryant Paper Company, 6.3 cents; Dobler & Mudge, 6.69 cents; Royal Card and Paper Company, 6.65 cents and J. R. Howarth Paper Company, 7.02 cents.

H. J. Adrian Made Mill Manager

STEVENS POINT, Wis., September 8, 1936.—H. J. Adrian, machine superintendent at the Consolidated Water Power and Paper Company's plant here, has been promoted to mill manager, succeeding H. B. Richmond, who recently became superintendent of production for the Wisconsin Rapids division of the Consolidated. James A. Rush has been appointed machine superintendent.

Get Patent For Testing Coated Paper

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, September 7, 1936.—Two Hamilton men have been granted a patent on the method of testing coated paper. It is said to be an important development in that branch of paper manufacture.

Donald D. Bradner and William J. Montgomery filed their patent application on January 28, 1928, and waited eight and one-half years while patent examiners compared their claims with the records of all similar patents previously issued.

The final decision of the examiners was that Bradner and Montgomery were entitled to credit for 20 completely new ideas.

The Hamilton men have assigned their patents to the Champion Paper and Fibre Company of Hamilton.

The official description of the patent as given out by the Patent Office, is as follows:

"The method of testing the coatings on coated paper comprising adhesive contacting to the coated paper a strip of adhesive tape, connecting the tape to a swinging body, allowing said body after it has swung through a predetermined arc to partially pull the tape from the paper and measuring the work done by the body."

Establishes Aldine Awards at Carnegie

As an incentive to the better understanding of paper and the development of technical skill, Harry Gould, president of the Aldine Paper Company, announces the establishment of the "Aldine Award" for high scholastic standing in the study of printing at the Carnegie Institute of Technology.

"We were prompted to create this medal and scholarship award," said Mr. Gould, "because we see a need for the development of printing education and realize its importance to the printing and paper industries. We know that much has been done in offering excellent educational opportunities throughout the United States, yet we wanted to do something to help these young printing students and to create for them an incentive for greater accomplishment. We also wanted to let them know that we paper men have a wholehearted interest in the development of the printing industry, just as we have in creating finer and more beautiful papers. With this thought in mind, we will hereafter annually present a cash award and a medal to the outstanding Junior Year student of printing at Carnegie."

This year's winner of the "Aldine Award" is Irving A. Norgren, of Brooklyn. Formal presentation will be made to him in the fall, when he returns to school.

Announces a New Service

The Cooper Alloy Foundry Company of Elizabeth, N. J. announces a division through which is extended a new service. One of the original and largest producers of stainless steel castings since 1927, the company has made special note of the shortcomings in alloy machining. In opening its new branch, the company has incorporated principles that rectify former mistakes and remedy old deficiencies.

The Stainless Engineering and Machine Works has been organized to supply a specialized machine work adapted to stainless and heat resisting metals. Informed by an able staff and equipped with adequate machinery, it is in a position to design and construct with any alloy, in particular stainless steel.

The officials are Harry A. Cooper, president and M. J. Robert, vice-president and general manager.

Arrived ★ COLUMBIA LIQUID CHLORINE

★NEW..ULTRA-MODERN PLANT NOW IN PRODUCTION

★LATEST TECHNIQUE

And · of course · the same top standards of purity, uniformity and SERVICE that have distinguished COLUMBIA products for nearly half a century.

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Delivery in single and multiple unit tank cars . . Also in 100 lb. and 150 lb. cylinders.

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★ CAUSTIC SODA
★ MODIFIED SODAS
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★ AND NOW *Liquid Chlorine*

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Program for National Paper Trade Meeting

The following is the preliminary program for the semi-annual meeting of the National Paper Trade Association at the Drake Hotel, Chicago, Ill., September 20 to 22 inclusive:

SUNDAY, SEPTEMBER 20

10:00 A. M.—Meeting of Executive Committee, Private Dining Room H, East Mezzanine.

MONDAY, SEPTEMBER 21

9:30 A. M.—Book and Offset Committee—A. M. Miller, Chairman.
Survey Committee—W. B. Killhour, Chairman.
Traffic Committee—R. W. Campbell, Chairman.
Envelope Committee—Bruce Smith, Chairman.
Gummed Tape Committee—C. H. Schorske, Chairman.
Fine Paper Merchandising Committee—J. H. Brewer, Chairman.

11:00 A. M.—Wrapping Paper Merchandising Committee—F. W. McCarthy, Chairman.
Bristol, Blank Board and Tag Committee—E. H. Kniep, Chairman.

2:00 P. M.—Writing Paper Committee—P. W. Lesh, Chairman.
Wrapping Paper Committee—Sidney Strauss, Chairman.

3:30 P. M.—Groundwood and Newsprint Committees—J. C. Marvin, Chairman.
Box Paper Committee—Wm. Schild, Chairman.

4:30 P. M.—Wrapping Paper Governing Committee—F. B. Tracy, Chairman.
Fine Paper Governing Committee—G. G. Cobean, Chairman.

8:00 P. M.—Meeting of the Board of Directors—O. F. Marquardt, Chairman—Private Dining Room G, East Mezzanine.

TUESDAY, SEPTEMBER 22

10:00 A. M.—General Meeting.
Address by Honorable Hubert Utterback, Congressman from Iowa.
Report of Survey Committee.
Report of Traffic Committee.

Northern Paper Co Starts

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., September 8, 1936—A certificate was filed this week by Sherman C. Stewart showing that he is operating a converting plant in a leased plant here under the name of the Northern Paper Company. For a number of years he was manager of Ontario Specialties before retiring August 1. The new company will convert paper into sheets and pads for school and general office purposes, specializing in writing tablets, composition books, pads and sheet paper. Since resigning Mr. Stewart has been busy placing his plant in readiness and early this week the first order of pads was turned out. The new concern has opened sales offices in New York, Boston and Philadelphia, Pa. The company plans on doing an export business with Cuba and Porto Rico and a number of contacts have been made which will aid in export work. Ford O. Gotham, who has been associated with the paper industry for 20 years, will be in charge of production for the new company. Henry T. Powers, of New York, will be in charge of sales and Mrs. Dorothy V. Case will supervise the office staff. A business trip through the New England states by Mr. Stewart has resulted in booking several large orders which are expected to keep a force of 20 workers steadily employed for several months.

Port Mellon Pulp Mill to Reopen

The sawmill and pulp mill at Port Mellon, Howe Sound, B. C., after lying idle and uncompleted for more than five years, will be put in operation at the beginning of 1937. Approximately 200 men will be given employment by the project, which will involve, when everything is carried out, a capital expenditure of $2,000,000.

A group of American capitalists associated with F. W. Leadbetter, of Portland, Ore., have formed the Port Mellon Operating Company, a British Columbia organization, to take over the enterprise as a lessee from the Vancouver Kraft Company of British Columbia, which constructed the large sawmill and the 100-ton kraft pulp mill on the site six years ago at an outlay of $1,800,000. Men are already at work rushing the huge project to completion. It is understood that the kraft pulp made at Port Mellon will be shipped to the southern paper mills of the Leadbetter group in Oregon and California.

The Vancouver Kraft Company had the kraft mill at Port Mellon nearly completed in 1929 and 1930, and almost ready for operation when business conditions halted construction. Although the plant has been idle since then, it is stated that it has been maintained in good condition. The Port Mellon pulp mill was originally built nearly thirty years ago, but prior to its reconstruction in 1929 was shut down for a long period, because, it is said, the equipment was not sufficient to compete with the modern installations in newer mills. When reconstruction took place, it was planned to have a 600 ft. deep sea wharf and a sawmill with a daily capacity of 160,000 feet board measure.

Herbert E. Shaw Dead

BOSTON, Mass., September 7, 1936—Herbert E. Shaw, one of the most respected and highly regarded salesmen of Storrs & Bement Company, passed away at his residence, 21 Carver road, Watertown, Mass., early Tuesday morning, in his seventieth year, following a heart attack. He had long been connected with the paper trade and with Storrs & Bement Company for the last twenty-five years.

Mr. Shaw was editor and past grand warden of the New England Order of Protection of Massachusetts, a member of the Eliot Lodge of Masons and of the Ancient Order of United Workmen, and past president of the Highland Club of Roxbury.

A number from Storrs & Bement Company attended the funeral services, held at Waterman's Funeral Chapel, 497 Commonwealth avenue, Boston, on Friday.

They are living his wife, three daughters, Mrs. Marion Drew, of Malden, Mass.; Mrs. Florence Remington, of Watertown; and Miss Hazel D. Shaw, of Watertown; and a sister, Mrs. James A. Rich of Hartland, Vt.

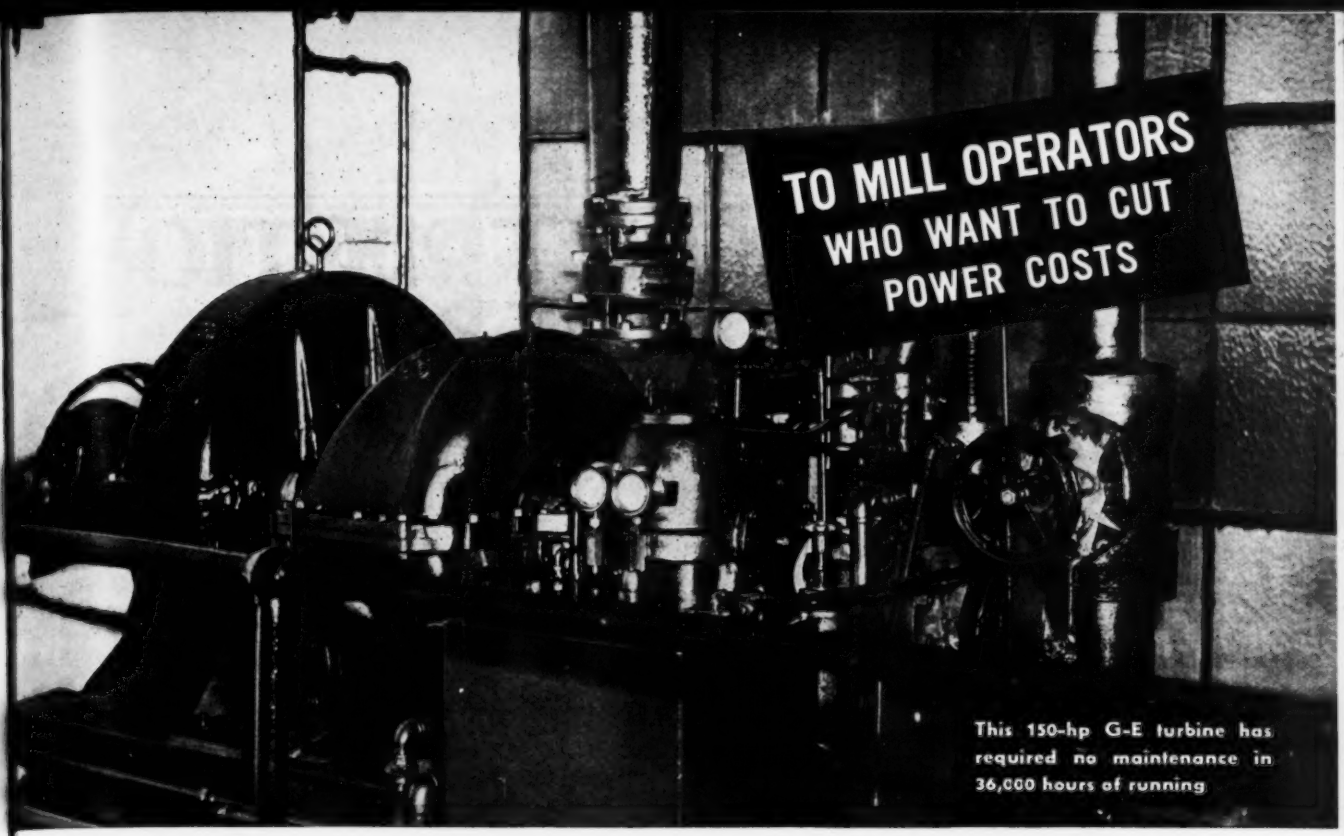
Ingersoll-Rand Type S Diesel

Ingersoll-Rand Company, 11 Broadway, New York, N. Y. recently announced its Type S Diesel Engine. This engine is an improved design which is thoroughly modern in all respects. It is of the vertical, four-cycle, single-acting, solid-injection type designed to run at medium speeds and built for heavy-duty, continuous service.

The fundamental design is similar to that of the successful Ingersoll-Rand locomotive engine of which there are more than 140 in operation. Some of these have been in service for over 12 years.

Type S engines are made with 3, 4, 5, 6 and 8 cylinders for ratings from 150 to 460 horsepower.

A new 24-page bulletin describing these engines has just been issued. It may be obtained from any Ingersoll-Rand branch office.



This 150-hp G-E turbine has required no maintenance in 36,000 hours of running

BOTH POWER AND HEAT FROM THIS G-E TURBINE

HEAT was needed for the paper-machine dryers; power was needed for the paper machine itself. The most practical solution was the selection of a G-E turbine with proper reduction gears to drive the machine, and the use of exhaust steam for the dryers.

This was the decision of the Buckeye Cotton Oil Company of Memphis. Since then, for more than six years, a 4264-rpm G-E turbine has been operating 24 hours a day, five days a week, with no maintenance and no attendant. The only cost chargeable to the power has been one oil change a year. Rating of the turbine: 150 hp, 125 lb initial pressure, 8 lb exhaust.

There are thousands of small G-E turbines in operation today. Each one has been carefully designed, built, and tested according to the same standards used in building the huge G-E turbines for the nation's large power plants. No job is too small or too large, no conditions too exacting but that General Electric can supply the turbines needed. For information, see your G-E salesman, or write to General Electric, Schenectady, N. Y.

GENERAL ELECTRIC

Send for this booklet, which describes G-E mechanical-drive turbines.

General Electric, Dept. 6A-201, Schenectady, N. Y.

Send me your booklet "Steam Turbines for Mechanical Drive" (GEA-1145C).

Name..... Street.....

City..... State.....

720-260

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Garwood, N. J.—The Sonoco Products Company, North avenue, manufacturer of paper cones, paper tubing and kindred paper products, has approved plans for new addition to local mill, to be one-story and basement, 80 x 150 feet. Construction contract has been awarded to the Mahony-Troast Construction Company, 657 Main Avenue, Passaic, N. J., and superstructure will be placed under way at once. Cost over $50,000 with equipment. Frederick L. Smith, 21 East Fortieth street, New York, N. Y., is engineer.

Baltimore, Md.—The Enterprise Paper Company, Lexington Building, paper products, has leased a building at 523 North Eutaw street, and will occupy for local headquarters, including storage and distributing divisions. Company will take immediate possession.

Chicago, Ill.—The Lawndale Bag and Paper Company has been organized with capital of 25 shares of stock, no par value, to take over and succeed to the Lawndale Bag Company, 3906 West Sixteenth street, manufacturer of paper bags and containers. Charles Price is one of the principal incorporators of new organization.

Cincinnati, Ohio—The Clopay Corporation, York street, manufacturer of paper products, has asked bids on general contract for new addition to paper converting plant, to be two-story, 100 x 220 feet, estimated to cost over $100,000, including equipment. Large increase in present capacity will be carried out. It is proposed to award general contract and place superstructure under way early in the fall. Carl J. Kiefer, Inc., Schmidt Building, is consulting engineer.

Seattle, Wash.—The Independent Paper Stock Company, 650 Seventh street, San Francisco, Cal., has filed plans for proposed new branch storage and distributing building at 66 Hanford street, Seattle, recently referred to in these columns, and will proceed with erection at early date. It will be two-story, 120 x 130 feet, estimated to cost about $55,000, including equipment. Ralph A. Beebee, 1976 San Pablo street, Berkeley, Cal., and Leland S. Rosener, 233 Sansome street, San Francisco, are engineers.

Plattsburgh, N. Y.—The Berst-Forster-Dixfield Company, manufacturer of tissue, crepe and other paper stocks, has awarded general building contract to the James Leck Company, 211 South Eleventh street, Minneapolis, Minn., for new addition to local mill, for which superstructure will be placed under way at once. It will be one-story, reported to cost in excess of $50,000, including equipment. Company headquarters are at 420 Lexington avenue, New York, N. Y.

Savannah, Ga.—The Savannah Port Authority is completing plans for construction of a new wharf at local plant of the Union Bag and Paper Corporation, Woolworth Building, New York, N. Y., now in course of erection, to be used by the last noted company for handling of pulpwood and other service. The wharf is estimated to cost about $40,000, with mechanical-handling facilities. Work is scheduled to be placed under way at once.

Ampthill, Va.—The duPont Rayon Company, manufacturer of viscose rayon products, has plans maturing for new addition to mill at Ampthill, near Richmond, Va., to be used primarily for expansion in film manufacture. New unit will be designed for large capacity and is reported to cost in excess of $150,000, with equipment. Main offices of company are at 350 Fifth avenue, New York, N. Y.

East Chicago, Ind.—The United States Gypsum Company, 300 West Adams street, Chicago, manufacturer of wallboard products, etc., has awarded general contract to the Sill Construction Company, 520 North Michigan avenue, Chicago, for proposed new addition to mill at East Chicago, recently referred to in these columns. Superstructure will be placed under way at once. It will be one-story, 80 x 420 feet, estimated to cost in excess of $100,000, including equipment.

Sunderland, England—The Hendon Paper Works, Ltd., manufacturer of fine papers, has been carrying out an expansion program at mill, including installation of a new paper-making machine and auxiliary equipment, producing a sheet 127 inches in width. The unit is designed particularly for the manufacture of writing papers from esparto grass pulp. Other improvements have been made in the different mill departments, for corresponding increase in output.

Strasbourg, Germany—Papeteries de Strasbourg, Ltd., manufacturer of paper products, has preliminary plans under way for the construction of a large mill at the Strasbourg Rhine Harbor, for the manufacture of cellulose. It will consist of several one and multi-story buildings, reported to cost over $500,000, with machinery. Company has recently arranged for a large increase in capitalization.

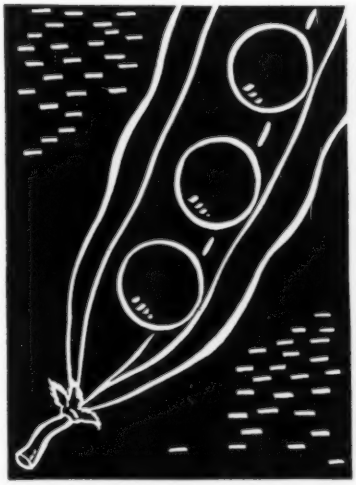
New Companies, Etc.

New York, N. Y.—Clik Products Corporation has been incorporated with capital of $10,000, to deal in paper products of various kinds. Company is represented by Barnett J. Monka, 44 Court street, Brooklyn, attorney.

Toledo, Ohio—The Toledo Bottle Cap Company has been chartered under the direction of the Corporation Trust Company, Industrial Trust Building, Wilmington, Del., with capital of $100,000 and 2,500 shares of stock, no par value, to manufacture paper bottle caps, cartons and kindred paper products.

AS *Unlike*

AS PEAS IN A POD



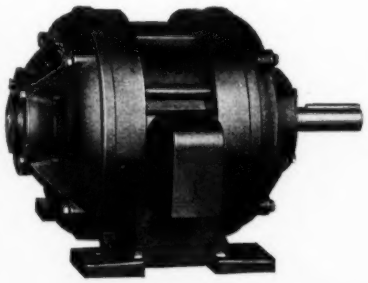
● Peas in a pod may look exactly alike . . . in color, in size, in shape . . . but naturalists know that these seemingly identical peas have huge inherent differences—one may engender a sturdy race, another a race of weaklings.

PEAS . . . and MOTORS! In both, the possibilities for inherent differences are great.

Motors can be built of light materials so that they will hold together and fulfill their electrical characteristics . . . but what about their mechanical durability?

Allis-Chalmers Motors excel because they were distinctly designed and developed for severe industrial duty. They were not developed through our electrical department alone, but through our electrical department working closely in conjunction with all the highly specialized knowledge and experience of all the various departments of the Allis-Chalmers Mfg. Co., builders of the most diversified line of machinery on the American continent.

The Allis-Chalmers Mfg. Co. builds standard motors of every type from 1 hp. up—also motors for special application



Allis-Chalmers Motors have been designed and built not only to deliver their electrical characteristics precisely, but to take a beating day after day and year after year and continue to deliver them faithfully. They are the sturdiest motors on the market—bar none.

Their great mechanical strength reduces maintenance costs to the minimum and extends their life beyond that of all less sturdily constructed motors, making them the most profitable motor buy on the market today.

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FUTURE MEETINGS

NATIONAL PAPER TRADE ASSOCIATION, Annual Fall Meeting, Drake Hotel, Chicago, Ill., September 21-23, 1936.

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—Fourth Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway, Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

PAPER PRODUCTION AND DISTRIBUTION AHEAD OF YEAR AGO

Uniformity of gains, which were disturbed little by the usual seasonal influences during the summer, extended improvement in the paper industry during the first eight months of 1936. Increases in production from the corresponding 1935 tonnage ranged from 10 to as high as 25 per cent, and some divisions were only a small percentage under the 1929 peak for the period. For wholesale distribution the average was 12 to 18 per cent, the largest volume recorded since 1930, as buying was active all summer, and fall orders were placed nearly a month earlier than last year.

Steady widening of the demand base has occurred since the close of the first quarter, and the number of paper consumers has been multiplied. The rise in newsprint production, which for the United States and Canada was up 11.9 per cent from the seven-month total of 1935, and exceeded all previous periods to 1929, has brought the estimated world production for 1936 to 4 to 6 per cent over the 7,628,000 short tons produced in 1935. Exports of paper and products were 12 per cent more than in the first six months of 1935, the largest half-year total since 1931.

While there has been a little shading on some items, influenced by local competitive conditions, the price structure generally has remained firm, with advances indicated. Orders for new equipment have mounted since March, due to extensive paper mill repairs and improvements. The obsolescence factor has been an obstacle to progress during the last two years, due to the almost complete absence of replacement outlays since 1929. These were some of the major developments revealed by a survey of the paper industry, which has just been completed by Dun & Bradstreet, Inc.

Output in the paper industry gained steadily during the summer, with most divisions reaching the year's peak in June or July. Some of the Wisconsin mills curtailed schedules during August, because of the water shortage, but in other sections of the country the customary Summer shutdowns were skipped. Due largely to the rise since March, production for the first eight months of 1936 went from 10 to 15 per cent in tonnage and 15 to 18 per cent in dollar volume over the comparative 1935 figures.

Much of this increase was furnished by the producers of kraft paper, wrapping paper, and paper bags, whose output was up 20 to 25 per cent from last year's. Gains in the fine paper division have started to widen in keeping with the increase in advertising campaigns scheduled for fall. Most of the book mills set operations ahead early in August. For thirteen consecutive months the combined production of newsprint in United States and Canadian mills has been maintained above that of the year preceding.

July marked the third successive time that Canadian newsprint production established a new high for any month in the history of the industry. As production in the United States mills failed to follow this uptrend, the combined total for the two countries for the first seven months of 1936 of 2,297,390 tons failed to set a new record, as it was 2.2 per cent under the 1929 peak of 2,348,286. It was 11.9 per cent larger, however, than in 1935.

Gaining momentum rapidly since April, wholesale paper volume for the first eight months of 1936 averaged from 12 to 18 per cent larger than that for the corresponding 1935 period. For July and August, some wholesalers reported increases up to 25 to 35 per cent, although these usually are quiet months. Buying was at a good rate all during the Summer, and in most branches of the trade the customary seasonal recession was entirely absent.

Allowing for the normal downtrend of orders during the fourth quarter, it is estimated that wholesale volume for the year will run to approximately $465,000,000, or a gain of about 12 per cent over the $415,000,000 reported by the Department of Commerce for 1935. Distribution has been featured by package paper, wrappings, and all grades suitable for industrial use. Stationery, commercial bonds, and the finer advertising papers bolstered the volume.

Little fluctuation has marked the upward trend of orders for building paper since March. Paper bag business was good and the box board market improved. Both cardboards and blotting paper moved out in larger quantities than last year, and most of the rag papers sold well. The widest increases continued to be reported for the kraft division. Insistent demand for summer specialties built up the best volume for any comparative season since 1929.

Excepting for a few minor fluctuations, prices have been firm, the steadiness extending to all grades. It is the general consensus, however, that mark-up of a substantial

percentage will be made before the end of the fall selling season, because of the narrowed margin of profit, due to increased production and distribution costs.

Kraft paper, kraft liner board, and paper bag prices were increased about 10 per cent in April, but as these were offset by higher production costs, no gain in profit percentages resulted. Book paper prices became more stable and wrapping paper continued steady. Some grades of fine paper were marked up late in June.

Instead of the higher mark-up indicated, the price of newsprint for 1937 has been set by both United States and Canadian producers at $42.50 a ton. This is an increase of $1.50 a ton over the 1936 quotation of $41, which was the first advance since April, 1933, when it was lowered to $40 from $45. The 1938 price is expected to be $50.

For both bankruptcies and 77-B cases, the totals for the seven months of 1936 were below those of the year preceding. Only two manufacturers of paper, both in Wisconsin, were listed under the 77-B cases during the period, which compared with 12 for the full year of 1935. Since June 7, 1934, when Section 77-B of the New Bankruptcy Act became effective, a total of 20 applications have been filed. All of these were by manufacturers.

Contrary to the situation in 1935, when the failure trend in the paper industry was upward, because of the increase in the wholesalers' and retailers' group, the latter showed the largest reduction this year. The number for the seven-month period was only 8, as against 24 for the twelve months of 1935. For manufacturers the total was 4, compared with 6 a year ago.

To Expand Wilmington Terminal

The growth in the wood pulp tonnage handled at the Marine Terminal, Wilmington, Del., is bringing about necessary expansion in existing facilities and preliminary plans are now under consideration for a development program at the harbor to cost close to $1,000,000, specially arranged for the most part for the handling of shipments of wood pulp from Finland, Germany, Czechoslovakia, as well as Nova Scotia and the Pacific Coast. Of a total of about 168,000 square feet of floor space for storage at the present terminal, approximately 70,000 square feet are given over to wood pulp, the bales being piled 10 to 12 high. The valuation of such material arriving at the local port annually is now placed at $1,250,000.

Projected plans provide for a new warehouse unit, with total floor area approximating 100,000 square feet, with a transient shed adjoining of 60,000 square feet, and an additional wharf, at least 1,000 feet long, extending between the present terminal wharf and the Delaware River. The existing wharf is 2,000 feet in length. To indicate the increase in the wood pulp tonnage handled at the terminal, it is pointed out that in the fiscal year ending June 1936, 46,506 tons, or 232,530 bales, arrived for different destinations, as compared with 6,447 tons during the fiscal year ended June 1932.

A. Bankus Made Vice President

SAN FRANCISCO, Cal., September 5, 1936—A. Bankus has been elected vice president of the Crown Zellerbach Corporation and also vice president of the Crown Willamette Paper Co.

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES

Month	1936	1935	1934
January	76.1%	65.8%	.....
February	77.9%	70.0%	.....
March	76.0%	70.5%	.....
April	82.3%	70.0%	.....
May	81.6%	69.4%	.....
June	80.7%	72.3%	.....
July (b)	80.1%	67.8%	.....
August	.....	70.9%	.....
September (c)	.....	75.0%	59.4%
October	.....	75.6%	64.7%
November	.....	75.3%	61.7%
December (a)	.....	74.3%	62.1%
Year	.....	71.2%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1936		CORRESPONDING WEEKS, 1935	
*August 8	80.3%	August 10	70.0%
*August 15	81.1%	August 17	70.8%
*August 22	81.1%	August 24	70.4%
*August 29	83.2%	August 31	72.6%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks			
Ratio Limits	Aug. 8, 1936	Aug. 15, 1936	Aug. 22, 1936	Aug. 29, 1936
0% to 50%	88	89	78	56
51% to 100%	240	233	240	173
Total Mills Reporting	328	322	318	229

* Subject to revision until all reports are received.
These data exclude (a)—Christmas Day, (b)—Fourth of July, (c)—Labor Day.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours", were as follows:

Month	1936	1935	1934	Month	1936	1935	1934
January	61%	61%	....	July	69%	59%	....
February	67%	67%	....	August	....	65%	....
March	68%	67%	....	September	....	69%	62%
April	70%	61%	....	October	....	76%	63%
May	68%	61%	....	November	....	70%	56%
June	68%	65%	....	December	....	60%	(a)53%

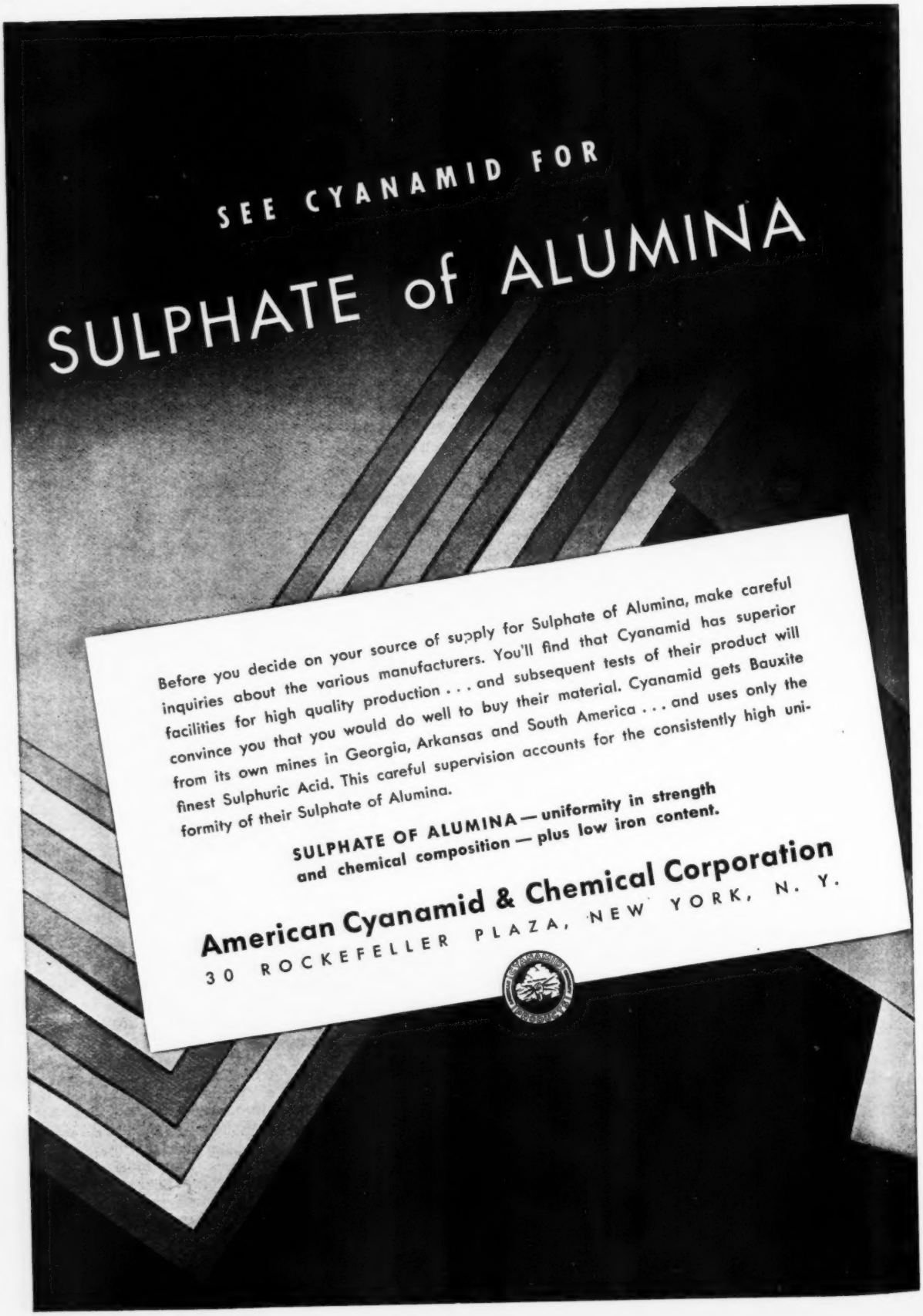
Week ending Aug. 8, 1936—71%
Week ending Aug. 15, 1936—74%
Week ending Aug. 22, 1936—75%
Week ending Aug. 29, 1936—76%

National Paper Products Co. Builds

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., September 8, 1936—Work was started last week on the construction of a new converting and warehouse building at the West End plant of the National Paper Products Company under the supervision of John J. Turner & Son. The new structure will be 360 by 220 feet and will be completed late in the fall. The new plant will be comprised of three sections of 120 by 220 feet each, separated by the partitions. The minimum height of the one-story structure will be eleven feet, under beams, and brick and tile will be used with the front faced with pressed brick. Overhead sawtooth lighting, a modern ventilating system and a separate heating plant, as well as a sprinkler installation, will be among the interior features of the new plant. At the rear will be a huge railroad spur connecting with the New York Central lines which will provide for the loading of several cars at a time.

The machine room of the present mill will be connected with the new building by the erection of an 80 by 60 foot addition which will bring together the manufacturing, converting and storage facilities in a single unit. An extensive amount of work is to be done also on the paper machines in order to bring them up to maximum efficiency in carrying out an additional modernization program which was launched in 1930. The plant here was started in 1916 with a single towel machine and was the first experiment with that product by the company.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30 ROCKEFELLER PLAZA, NEW YORK, N. Y.

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

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Specialties

Process for the Manufacture of Absorptive Paper and Cartons. Hofa Holzfaserstoff Gesellschaft m.b.H., Dresden. Ger. pat. 615,289 (July 12, 1933).—The fiber which is used as the raw material is screened very carefully so as to eliminate all slimy materials and the finest fibers; leaving only the more absorbent portion.—J. F. O.

Maturing of Paper. Sturtevant Engineering Co., Ltd., and W. Ardill. Brit. pat. 434,837 (May 4, 1934).—Paper direct from the paper machine calenders is both passed over cooling cylinders and reeled in a closed chamber into which conditioned air is introduced.—A. P.-C.

Apparatus for Drying Molded Pulp Articles. Walter H. Randall, assignor to Canal National Bank. U. S. pat. 2,017,017 (Oct. 8, 1935).—Molded pulp articles, such as plates, dishes, etc., are transferred from the forming die to a rotating suction die, on which it is dried by contact with successive dies heated to appropriate temperatures. —A. P.-C.

Results of Experiments on the Cementing Materials Coming As a By-Product in the Manufacture of Wood Fiber Materials. Th. Wilhelms. Wochbl. Papierfabr. 66, No. 36:680-81 (Sept. 7, 1935).—The cementing materials consist of the finest and smallest fibers and are especially suitable for papers with a smooth closed surface. Increase in opacity, and the tendency for the formation of a cloudy sheet due to coagulation are important properties of this cementing material.—J. F. O.

Preparation of Pulps Containing Hard Binder Substances. Harry C. Fisher assignor to The Richardson Co. U. S. pat. 2,022,311 (Nov. 26, 1935).—Fibrous material is mixed with a binder substance, such as bituminous material, to the extent of completely coating the fibers and forming a homogeneous plastic mass in which the fibers are substantially completely enclosed in a substantially continuous body of the binder. The resultant mass is mixed with additional uncoated fibrous material in the presence of water so as to break down the mass and cause portions of it to adhere to the uncoated fibrous material, the water being present in amount insufficient to act as a circulating medium. The broken down mass is finally beaten with water in sufficient amount to act as a circulating medium.—A. P.-C.

Process of Manufacture of Asphalt-Impregnated Board and Product Resulting Therefrom. Cartonneries Krantz Frères. Fr. pat. 791,537.—Paper or board is impregnated with small successive amounts of asphalt or other bituminous materials at different stages in its manufacture.—A. P.-C.

Artificially Colored Building Material. Orin R. Douthett, assignor to The Patent and Licensing Corp. U. S. pat. 2,021,716 (Nov. 19, 1935).—Asphalt impregnated and coated felt is showered with granules and pressed to partially embed the granules in the coating layer. The surface is then treated with a pigmented sodium silicate solution that is subsequently substantially insolubilized by chemical treatment at a comparatively low temperature.—A. P.-C.

Raw Stock for Blueprint Paper. Papier-Ztg. 60, No. 87:1524, 1526 (Oct. 30, 1935).—Raw stock for blue print paper is not quite as sensitive to metal impurities as photographic paper. Strength, especially high folding endurance, is a prime requisite. Sulphite pulp yields the best stock; groundwood pulp must be avoided, as well as a high percentage of filler. The addition of a small amount of straw pulp is beneficial. Great care must be exercised in beating so that a paper of correct absorptiveness results; only rosin size should be employed. Uniform drying and winding are further requisites; rewinding is recommended particularly with regard to removal of imperfect paper sections.—C. J. W.

Building Material from Spent Tanning Wood. R. Z. Faintzimmer, V. I. El'man and B. A. Simagin. Russian patent 35,994 (April 30, 1934).—The spent wood is mixed with husks or other vegetable albuminous products as binder, alkali or acid is added at ordinary temperature and the mass is pressed and dried at ordinary temperature. —C. J. W.

Process and Apparatus for Carbon-Coating Paper in Zones. L. H. Warnant and C. Stockmans. Belg. pat. 408,718 (April 30, 1935).—Coating is effected by means of disks placed side by side, each driven rotatively and laterally by means of a kinematic system controlled by electromagnets. The circuits of the latter are operated by means of a drum having a number of brushes corresponding to the number of electromagnets.—A. P.-C.

Adhesive Carbon Paper. Harold W. A. Dixon and Robson S. Moore assignors to Columbia Carbon and Ribbon Manufacturing Co. U. S. pat. 2,022,276 (Nov. 26, 1935).—Paper is coated with a layer of a soluble adhesive material such as gum arabic, dextrine, glue, etc., and allowed to dry. A layer is applied over the gum consisting of carbon transfer ink which contains or is composed largely of a water miscible or water soluble waxy or oily substance (preferably emulsifiable beeswax) into which is intimately mixed a suitable pigment material.—A. P.-C.

Base Paper Requirements of Carbon Paper. L. F. Supple. Paper Industry 17:803-804 (Jan., 1936).—A brief outline of the qualities required of base paper for carbon paper.—A. P.-C.

Manufacture of Carbon Paper. Papier-Ztg., Foreign ed.:10, 12 (July, 1936).—The raw stock consists of tissue paper in different weights prepared chiefly from rags. Chemical pulp is used only for the cheaper grades. The article gives a description of the coating and finishing processes used in connection with the manufacture of carbon papers and discusses several machine constructions.—C. J. W.

Cigarette Paper. La Cellophane, Soc. Anon. Fr. pat. 785,202 (Aug. 5, 1935).—A paper which burns without odor or smoke is made of viscose to which is added paraffin oil or liquid petrolatum oil.—A. P.-C.

Cigarette Wrappers. Nathan Sulzberger. Brit. pat. 433,228 (Aug. 12, 1935).—The wrapper is impregnated with a dilute solution of a water-resisting cellulosic material, *e.g.*, cellulose esters or ethers, collodion, celluloid, pyroxylin, cellulose acetate or nitrocellulose, in ether, alcohol, acetone or other solvent, that will evaporate readily without leaving a perceptible odor or flavor and without forming a surface film or coating. The solution may contain coloring matter, a "flattening" agent such as paraffin, plasticizers such as dibutyl or diamyl phthalate, medicinal and aromatic substances such as menthol, oil of cloves or tobacco extract.—A. P.-C.

Wrapper Paper for Cigars or Cigarettes. Philip Hornstein. U. S. pat. 2,020,646 (Nov. 12, 1935).—In order to prevent dropping of cigar or cigarette ashes when smoking, finely ground asbestos is mixed with the pulp, the mixture is boiled till it becomes a homogeneous mass and gum acacia is added during boiling.—A. P.-C.

Composite Lining Material. L. W. Oldfield. Brit. pat. 438,301 (Jan. 10, 1935).—Felt is covered on one or both sides with crepe or corrugated paper, which is coated outside with rubber solution in sufficient quantity to penetrate the paper and cause it to adhere to the felt. Intermediately there may be a layer of coarsely woven textile.—A. P.-C.

Composite Re-enforced Paper Fabric. Edward C. Smith, assignor to Amrican Reenforced Paper Co. U. S. pat. 2,026,194 (Dec. 31, 1935).—In a composite reenforced paper fabric suitable for the formation of box corner stay strips, the layers of material constituting the fabric are secured together face to face by a waterproof adhesive such as asphalt in which reenforcing unspun fibers are embedded.—A. P.-C.

Covering for Curing Concrete. Dozier Finley and William R. Greig, assignors to The Paraffine Companies, Inc. U. S. pat. 2,024,727 (Dec. 17, 1935).—The covering comprises a suitable water absorbent base such as rag felt which is coated on its upper side with a waterproof material such as blown asphalt or other bituminous compounds.—A. P.-C.

Manufacture of Crinkled Paper. Rudolf Heitmann. U. S. pat. 2,019,903 (Nov. 5, 1935).—A plain web or one that has been creped transversely is passed for part of its length into a slot or channel which is of the same width as the web. While the web is stationary the width of the slot is reduced, thereby forming longitudinal folds or crinkles. The slot is then widened to its original width and the web advances to crinkle a fresh length.—A. P.-C.

Decorative Sheet Material. Peintal, Soc. Anon. Brit. pat. 438,494 (April 24, 1935).—Surface-oxidized aluminum foil is coated on to a paper or cardboard base. The foil surface may be dyed or otherwise colored.—A. P.-C.

Creped Decorative Paper. Benjamin Asnes, assignor to Dennison Manufacturing Co. U. S. pat. 2,020,928 (Nov. 12, 1935).—A strip of paper is creped transversely to permit stretching and is adhesively united (preferably by means of an ordinary gum type adhesive that hardens upon drying) to another sheet of paper, foil, regenerated cellulose, etc., which is creped to a less extent, or is creped longitudinally, or preferably is uncreped.—A. P.-C.

Decorative Paper and Method of Making the Same. Joseph J. Pohlmann, assignor to The Beveridge-Marvellum Co. U. S. pat. 2,028,948 (Jan. 28, 1936).—A number of irregular areas of two or more different colors are applied to paper, the areas having no defined boundaries and being formed of variously-spaced dots. An unbroken translucent crystalline coating is formed by applying a suitable lacquer and allowing the volatile solvent to evaporate.—A. P.-C.

Decorative Material. Fred George, assignor to The Hinde and Dauch Paper Co. U. S. pat. 2,027,586 (Jan. 14, 1936).—A sheet of decorated, creped or crinkled paper is applied to a single-faced corrugated board, forming substantially a double-faced corrugated board which can be readily curved or bent about an axis parallel to the corrugations.—A. P.-C.

Process of Producing Decorative Sheet Material. James J. Jackson, assignor to Sandura Co., Inc. U. S. pat. 2,028,781 (Jan. 28, 1936).—A so-called "smooth surface" decorative floor covering having remarkable flexibility and toughness and having well-defined decorations substantially throughout the thickness of the sheet, is produced by applying a backing composition (*e.g.*, oil and (or) lacquer) to one side of a porous fibrous sheet and then applying decorative material to the other side. The amounts of materials and the interval between their application to the two sides are so controlled that the materials penetrating from both sides preferably overlap within the body of the sheet.—A. P.-C.

Decorative Sheet Material and Process of Manufacturing the Same. James J. Jackson, assignor to Sandura Co., Inc., U. S. pat. 2,028,782 (Jan. 28, 1936).—In the production of a tough, strong, flexible, smooth or hard-surfaced floor covering material, there is applied to a porous fibrous sheet (either before or after application of decorative design) an oil and (or) lacquer composition so as to distribute it uniformly over the surface of the fibers without completely filling the voids. The material is then saturated with a molten saturant consisting essentially of ester gum, china-wood oil and chlorinated naphthalene.—A. P.-C.

Decalcomania Paper. Lewis Davis, assignor to McLaurin-Jones Co. U. S. pat. 2,023,803 (Dec. 10, 1935).—The invention provides a decalcomania paper comprising a suitable backing to one side of which are applied three superimposed water-resistant coatings, the middle one being insoluble in solvents used for removing the other two. Suitably, the first and third coats may consist of coumarone resin and the middle one of gum sandarac.—A. P.C.

Card or Paper Stock for Use in Duplicating Processes. Raymond S. Jones. U. S. pat. 2,021,938 (Nov. 26, 1935).—Card or paper stock intended to receive hectograph or other ink from a gelatin roll, etc., is given a surface coating (by means of a platen press or a roll)

of a composition which imparts hygroscopicity to the surface of the sheet. The following are examples of suitable compositions: (1) glycerine, crude oil, sodium silicate, sodium bicarbonate, alum, water; (2) glue, sodium bicarbonate, sodium silicate, alum, starch base.—A. P.-C.

Manufacture of Emery Paper. Minnesota Mining and Manufacturing Co., assignees of R. P. Carlton. Brit. pat. 433,128 (Feb. 5, 1934).—The gritty abrasive is sprayed on to the adhesive-coated paper by a combination of mechanical and electromagnetic devices so adjusted as to cause the grits to adhere perpendicularly to the surface of the cloth.—A. P.-C.

Felt and Process of Making Same. Pierre Drewsen, assignor to The Barrett Co. U. S. pat. 2,029,310 (Feb. 4, 1936).—Felt suitable for saturating with tar, asphalt, etc., is produced from a blend in suitable proportions of three grades of fibers: (1) fibers in which strength is the predominating characteristic (*e.g.*, jute or flax cooked by the calcium pentasulphide process of Viggo Drewsen's U. S. pat. 996,225, June 27, 1911); (2) fibers of high absorptive capacity (*e.g.*, wood cooked by the pentasulphide process and disintegrated in an edge runner or beater or mildly cooked straw fibers); (3) filler fibers of relatively low saturating capacity and strength (*e.g.*, thoroughly cooked straw fibers).—A. P.-C.

Fertilized Mulch Paper. Edward R. Pratt. U. S. pat. 2,030,267 (Feb. 11, 1936).—The invention provides a strip of paper in which a series of discs are incompletely punched out and the under side of which is coated with a mixture of fertilizer and adhesive.—A. P.-C.

Process for the Manufacture of Field Book Paper. Paula Muckenheim, Datteln. Ger. pat. 615,127 (March 8, 1933).—The paper used for field purposes has many severe conditions to combat and hence its specifications are many and difficult. A liquid consisting of 65 per cent varnish and 35 per cent of a solution of three parts Canada balsam in seven parts of acetone or some similar solvent, for example, amyl acetate, alcohol, benzine or benzol; is used in treating the raw paper stock.—J. F. O.

Fireproof Thermal Insulator. Lawrence D. Morton assignor to The Hinde and Dauch Paper Co. U. S. pat. 2,018,800 (Ot. 29, 1935).—A number of flat and corrugated sheets of thin close-textured paper are alternately superimposed upon one another between two flat side sheets and secured along contacting surfaces with a fireproof cement.—A. P.-C.

Fireproofing. Robert G. Quinn, assignor to International Paper Co. U. S. pat. 2,030,653 (Feb. 11, 1936).—Coarse stock and fine stock are treated separately with a solution of monoammonium phosphate and boric acid containing finely divided colloidal material. The treated stocks are screened, mixed with an emulsion of size, wax and chlorinated naphthalene or diphenyl derivatives, beaten, formed into board, dried and surface-moistened with ammonia.—A. P.-C.

Flong. Walter E. Langley. Brit. pat. 430,850 (June 26, 1935).—Flong used in making molds for casting printing-plates consists of paper pulp mixed with lithopone which may be added to the pulp in the beaters.—A. P.-C.

Flooring Material and Method of Making Same. Herman W. Richter. U. S. pat. 2,026,594 Jan. 7, 1936).—Waterproof fibrous material is formed into sheets; a number of sheets are laminated together to form a block, and the block is cut into slabs. A suitable furnish is as follows: mixed papers 1200 lb., leather or leatherboard chips 241 lb., red oxide of iron 1445 lb., sodium silicate 98 lb., 50 per cent clay dispersed asphalt 2845 lbs.—A. P.-C.

Production of Flexible Sheet Materials Having a Sticky Surface. I. G. Farbenindustrie A. G. Brit. pat. 437,704 (July 9, 1934).—Branched-chain, aliphatic monoolefines when polymerized at —40 deg. to +80 deg. C. by a Friedel-Crafts reagent (aluminum chloride, boron fluoride, titanium tetrachloride) yield sticky substances which are compounded and used in preparing adhesive flexible sheets such as fly-paper.—A. P.-C.

Process for Gumming Paper. Seaman Paper Co. Blg. pats. 410,319 and 410,362 (Aug. 31, 1935).—*No. 410,319*—The liquid adhesive is deposited on a moving surface and worked to increase the viscosity and form a uniform film on a second moving surface. The film is transferred to the dry fibrous web and the combination is pressed and dried. *No. 410,362*—A moist fibrous web, after partial drying, is brought into contact with a moving surface carrying a film of plastic adhesive. The film is pressed on the surface of the fibrous web and the gummed sheet is dried.—A. P.-C.

Reenforced Gummed Tape. Ferdinand W. Humphner assignor to Mid-States Gummed Paper Co. U. S. pat. 2,024,224 (Dec. 17, 1935).—The tape comprises a strip of paper across the grain of which and on one side is a lock-thread stitching of heavy bobbin thread secured to the paper by a small upper tension thread. Adhesive is applied to the paper on the side opposite the bobbin thread.—A. P.-C.

Adhesively Coated Tape. William W. McLaurin. U. S. pat. 2,031,275 (Feb. 18, 1936).—A gummed tape suitable for veneering operations comprises a strip of heavy, strong, backing paper to which a strip of perforated tissue paper is applied by means of an adhesive coating (suitably starch, gutta percha, latex, etc.) which is bound more strongly to the backing sheet than to the tissue. A coating of glue is applied to the outer surface of the tissue ply.—A. P.-C.

Pressure-Sensitive Adhesive Tape. Ferdinand W. Humphner, assignor to Mid-States Gummed Paper Co. U. S. pat. 2,019,010 (Oct. 29, 1935). —A loose fibrous web is treated with a shrinking solution and then with a glue solution, and is then stretched and dried in stretched condition. One side is then coated with a pressure-sensitive adhesive.—A. P.-C.

Paper for the Manufacture of Artificial Resin Hard Paper. Fritz Ohl. Wochbl Papierfabr. 66, No. 37:696-98 (Sept. 14, 1935).—The author first discusses the multiple uses of artificial resin papers, their properties; and the complete manufacture from the careful selection of raw materials to the tests on the finished product.—J. F. O.

Paper Treating Means. Harold R. Rafton, assignor to Raffold Process Corp. U. S. pat. 2,024,248 (Dec. 17, 1935).—Paper is impregnated with a solution or emulsion comprising as one of its constituents a volatile solvent that is to be recovered, and the impregnated paper is passed over heated cylinders to evaporate the solvent. The impregnating and drying mechanism is enclosed in a casing which communicates with the atmosphere only at the points where the paper enters and leaves. The casing is connected to a suitable solvent recovery apparatus.—A. P.-C.

Impregnated Paper or Fiber Articles. George A. Richter and Milton O. Schur, assignors to Brown Co. U. S. pat. 2,024,600 (Dec. 17, 1935).—A light porous sheet is impregnated with viscose in such quantity as not to appreciably impair its porosity (*e.g.*, 1 per cent regenerated cellulose on the weight of the fiber). After regeneration of the cellulose (*e.g.*, by drying) the material is impregnated with a thermoplastic material (*e.g.*, 250 per cent of asphalt on the weight of the fiber).—A. P.-C.

Impregnation of Insulating Materials. Girard T. Kohmann, assignor to Bell Telephone Laboratories, Inc.

U. S. pat. 2,026,316 (Dec. 31, 1935).—Insulating paper is exposed to moisture at a temperature of 50 deg. to 150 deg. C. and is immediately immersed in a bath of chlorinated naphthalene. Moisture is then removed from the material by maintaining under vacuum at the same temperature.—A. P.-C.

Method of Making Electrical Insulators. Gordon R. Langley, assignor to General Electric Co. U. S. pat. 2,025,540 (Dec. 24, 1935).—A unitary insulating tube having an inner metallic layer is formed by winding a first layer having an inner metallic coating thereon on a mandrel and then winding further layers of paper coated with fused phenolic condensation product on the first layer and heat-curing the whole.—A. P.-C.

Electrical Insulating Paper. Wochbl. Papierfabr. 66, No. 36:681-82 (Sept. 6, 1935).—A practical discussion of the manufacture of various grades of electrical insulating papers, from 0.005 mm. thick to 0.51 mm.—J. F. O.

Manufacture of Kraft Facing Paper for Boxboard. Papier 39:905-916, 999-1015 (Oct., Nov. 1935).—The superiority of kraft liners for both corrugated and solid boxboards is pointed out. Present day practice in the manufacture of this grade of kraft paper is described and discussed.—A. P.-C.

Metal Papers. Papier-Ztg. 60 No. 88:1542; No. 89: 1558 (Nov. 2, 6, 1935).—Metal papers, apart from genuine metal foils, can be divided into two main groups, the cheaper coated metal papers prepared with water-soluble adhesives, and the more expensive metal coated papers prepared with water and heat resistant adhesives. Testing methods for differentiating the three types, manufacture and applications are described.—C. J. W.

Process for the Production of Metallized Paper. Aluminumwerk Tscheulin G.m.b.H. Fr. pat. 788,987.—Metal foil or film is applied to paper by means of an adhesive consisting of mixture of an aqueous adhesive (starch or flour paste, casein, dextrin, gum arabic, latex dispersions, etc.) and aqueous dispersions of polymerized products (*e.g.*, polyvinyl esters, polyacrylic acid esters, etc.).—A. P.-C.

Manufacture of Metal-Coated Paper. E. I. du Pont de Nemours and Co. Brit. pat. 433,218 (Feb. 12, 1934).—The material is coated with a resinous material consisting of, *e.g.*, tung oil-polyhydric alcohol-polybasic acid resin 43.88%, a thinner containing naphtha 53.13%, and a drier (cobalt or manganese linoleate) 2.99%; a metal powder is sprayed over the surface and burnished before the varnish is completely dry, and finally the whole is baked at a temperature at which the varnish hardens.—A. P.-C.

Metallizing Processing Apparatus. L. A. Sommer, assignee of C. Leyst-Küchenmeister. Brit. pat. 432,466, (July 13, 1934).—Paper, etc., is coated with a thin film of a metal by passing it below a water-cooled surface arranged above a bath of molten metal in a chamber in which the pressure is maintained at 10^{-5} to 10^{-27} mm. The condensed film of metal can subsequently be thickened by electrodeposition of the same or another metal upon it.—A. P.-C.

Non-Blistering Roofing and Method of Preparing Same. Charles J. Merriam assignor to Stephen G. Wright. U. S. pat. 2,022,429 (Nov. 26, 1935).—In order to prevent blistering of prepared roofing, the impregnated felt is dusted with a fine powder (preferably water repellent such as zinc or calcium stearate) before coating with blown asphalt.—A. P.-C.

The Method and Arrangement for the Manufacture of Padding Paper from Several Webs of Paper. Ludwig Clemens, Berlin. Ger. pat. 615,912 (Sept. 17, 1933).—J. F. O.

Consumption of Sulphuric Acid in Parchmentization of Paper. N. A. Liskovich. Bumazhnaya Prom. 14, No. 7:19-25 (1935); C. A. 30:859.—A considerable economy in the consumption of sulphuric acid can be effected by parchmentizing paper with 92.5-97% sulphuric acid (65.5-65.9° Bé) and passing the paper through two wash baths. The waste acid should be directly concentrated to 31-34° Bé.—C. J. W.

Manufacture of Parchment Papers. George A. Richter, assignor to Brown Co. U. S. pat. 2,030,469 (Feb. 11, 1936).—The base paper used for parchmentizing contains an opaque filler which may either be inert towards the parchmentizing solution or may react therewith to form in situ in the paper other fillers of an opaque, insoluble character.—A. P.-C.

Material Containing Parchmentized Fiber and Method of Producing the Same. Ervin E. Strawn, assignor to Paterson Parchment Paper Co. U. S. pat. 2,023,711 (Dec. 10, 1935).—A porous waterleaf paper is coated on one side with a material that is not affected by cellulose-parchmentizing chemicals and having sufficient fluidity to penetrate into the pores of the paper and anchor itself firmly therein while leaving only a very thin film on the surface. Film scrap liquor is particularly suitable. The coated paper is parchmentized, *e.g.*, with sulphuric acid. Parchmentization may be carried out so rapidly as to parchmentize the uncoated surface appreciably more actively than the inner portion; the coated layer can then be readily stripped from the parchmentized layer, the two separated surfaces being quite fuzzy, and suitable further coating added if desired.—A. P.-C.

Influence of Parchmentizing in the Manufacture of Vulkan Fiber and the Properties of the Finished Product. F. I. Kortschemkin and M. E. Pomorzew. Zellstoff U. Papier 15, No. 10: 400-402 (Oct., 1935).—The parchmentizing taking place in the manufacture of Vulkan Fiber is of great importance. The influence of the following factors were studied; the temperature of the zinc chloride solution, duration of the rolling of the fiber board, temperature of the formation cylinder, concentration of the zinc chloride solution and the duration of treatment in the zinc chloride bath.—J. F. O.

Plates, Etc., of Cellulosic Fibrous Material. Gewerkschaft Aufbau. Brit. pat. 428,714 (May 17, 1935).—Plates, molded articles, etc., of high rigidity and strength and molded articles with a high volume of interstices, for building and sound, heat and electric insulation, are made from fibers of straw, etc., boiled with alkali metal monosulphites with or without alkali metal silicates or caustic alkalies, to which there may be added mechanically prepared fibrous material, *e.g.*, rolled straw, coarse wood pulp.—A. P.-C.

Reinforced Paper and Method of Producing the Same. P. Baumhuter. Fr. pat. 792,058.—The paper is reinforced by applying to it, while it is still in a plastic condition, closely spaced crossed threads in directions parallel and diagonal to the length of the paper.—A. P.-C.

Roofing Plates. Ya. Yu. Roitberg. Russian patent 38,480 (Aug. 31, 1934).—Organic fibrous material is made water-resistant by means of hot bitumen and then cemented together with lime-silica solution.—C. J. W.

Apparatus for Saturating Sheet Material. George P. Heppes, assignor to The Patent and Licensing Corp. U. S. pat. 2,023,019 (Dec. 3, 1935).—In saturating roofing felt, on leaving the saturating bath the felt passes through rolls having suitable recesses in their surfaces so as to leave an excess of saturant on one or both faces of the felt. The felt is cooled in a looping or festooning mechanism, and the supporting bars have raised contact points

to prevent the saturated sheets from adhering to the bars. —A. P.-C.

Safety Paper. Hugo Albert Schoeller G.m.b.H. Belg. pat. 407,722 (March 30, 1935).—There are incorporated into the paper at least two substances which react visibly with each other and which are separated from each other by a protective layer that swells easily, or is rendered permeable to liquids or is easily vulnerable to mechanical action.—A. P.-C.

Safety Papers. H. A. Schoeller G.m.b.H. Brit. pat. 434,867 (Feb. 1, 1935).—Compounds having bright color reactions, *e.g.,* silver or lead salts with sulphur, sulphides or chromates, or iron salts with tannic or gallotannic acid, are incorporated in two separate layers of paper which are then joined together with an intermediate protective layer of starch, animal size, casein, etc.—A. P.-C.

Manufacture of Safety Paper. D. Russell. Brit. pat. 437,969 (May 12, 1934).—A finely divided, chemically reactive metal, *e.g.,* iron, copper, manganese or ferro-manganese alloy, or metal oxide, together with other known safety ingredients (*e.g.,* manganese ferrocyanide) are incorporated in the pulp before running on the paper machine.—A. P.-C.

Paper for Checks, Etc. Benoit Louis Levet-Arnaud. Fr. pat. 785,574 (Aug. 13, 1935).—The falsification of documents is prevented by introducing into the paper used or applying to its surface substances containing one or more heterocyclic rings having one or more sulphur atoms, in combination or not with oxidation catalysts or substances favoring oxidation. Thus, dehydrothio-para-toluidine, accompanied or not by alkali ferrocyanide and sulphite, may be used. These may be added to the ink used instead of applying them to the paper.—A. P.-C.

Saturating Machine and Method of Using Same. Izador J. Novak, assignor to Raybestos-Manhattan, Inc. U. S. pat. 2,022,687 (Dec. 3, 1935).—Paper formed on a fourdrinier or cylinder machine is carried directly, while still on the wire or felt, through a saturating bath.—A. P.-C.

Water-Resistant Sandpaper. Carleton Ellis, assignor to Ellis-Foster Co. U. S. pat. 2,031,362 (Feb. 18, 1936). —A paper that has been rendered water-resistant by sizing with a wax emulsion is treated with binding composition consisting of a solution of nitrocellulose and ester gum. Abrasive particles are sprinkled on the freshly coated surface, which is then dried.—A. P.-C.

Sheet Material and Method of Manufacturing the Same. Joseph R. Sanborn, assignor to International Paper Co. U. S. pat. 2,026,253 (Dec. 31, 1935).—Slime-forming organisms such as develop in and around paper mills (particularly those using large quantities of groundwood) are grown in a nutrient medium which may advantageously contain groundwood extract or sulphite waste liquor. The slime growths are broken down (suitably in a beater) and converted into thin transparent sheets by running on a paper machine. Brittleness on drying the sheet may be prevented by incorporating (*e.g.,* by spraying) a lubricant such as a mixture of glycerin and mineral oil emulsion.—A. P.-C.

Manufacture of Stereotyping Mats. Papier-Ztg. 60, No. 102/103:1769-1770 (Dec. 21, 1935).—Bulky and absorbent stereotyping mats are manufactured from cotton stock and better grade waste papers; the latter must give a free pulp without impurities, lignified fibers or hard knots. Careful beating is essential; the roll should be lifted to just brush the stock to insure good mixing; knives and bed plate should not be too wide and too blunt. The mats are generally formed on cylinder machines, although Fourdriniers are also employed for this purpose in North America. The couch press must be very elastic and not press too hard, otherwise poor felting results and the two most important properties, softness and elasticity, are impaired. Drying must be gradual; only perfectly flat boards of uniform thickness give a good product. The finished mats are finally coated on one side with a special mixture and cut to required size.—C. J. W.

Substitution-Proof Paper. Goyn D. Mackrell, U. S. pat. 2,027,741 (Jan. 14, 1936).—A web of paper is passed through a design-applying press consisting of two co-acting rolls having a suitable design engraved and in relief, respectively. The paper is simultaneously treated with an appropriate liquid (preferably a solution of glycerine in water) that does not change the appearance of the paper when dry but reveals the design when the paper is wetted. —A. P.-C.

Surface-Finished Paper. George A. Richter, assignor to Brown Co. U. S. pat. 2,031,854 (Feb. 25, 1936).—The body portion of a sheet of paper is sized with a water-resistant agent such as rosin, wax, glue, etc., and at least one face is surfaced with regenerated cellulose which preferably is deposited as a pellicle in situ thereon.—A. P.-C.

Towel Paper. Brown Co. Fr. pat. 791,085; Belg. pat. 408,368 (April 30, 1935).—The wet strength of paper towelling is considerably increased without appreciably affecting its absorbency by impregnating the dried paper with a solution of glue containing a tanning agent such as formaldehyde, alum or tannin; suitably the finished towelling contains not over 5% glue nor more than 0.5% of tanning agent.—A. P.-C.

Fibrous Product and Method of Making the Same. George H. Ellis, assignor to The Insulite Co. U. S. pat. 2,027,581 (Jan. 14, 1936).—A suitable toxic agent is mixed with melted rosin and the mixture is pulverized and mixed with pulp by feeding into the suction side of the centrifuge pump that feeds the stock to the paper machine head box.—A. P.-C.

Old and New Transfer Papers. Papier-Ztg. 60, no. 96:1677-1678 (Nov. 30, 1935).—Transfer paper used by lithographers is a heavily coated paper for transferring impressions. A brief description of two special brands is given, the chrome transfer paper coated first with a mixture of gelatin and starch paste and then with albumin, and the gray-moist transfer paper coated with a mixture of wheat starch, gum arabic and large amounts of glycerin. The latter must be stored in large closed tin containers and not be allowed to dry out. If stored in moist cellars the glycerin is liable to absorb too much moisture and the coated layer separates from the body stock.—C. J. W.

Manufacture of Varnished and Impregnated Papers. Papier-Ztg. 60, no. 82:1442, 1444; no. 83, 1461-1464 (Oct. 12, 16, 1935).—Different types of machinery are described for coating and impregnating bakelite treated electric insulating paper. Reference is made to the Igraf method of impregnation according to which the raw stock is dipped into emulsions of fatty, protein or glutinous substances and then subjected to pressure, resulting in a thorough impregnation of the entire body of the web.—C. J. W.

Watermarking Composition. John C. Boyer, assignor to National Listing Exchange. U. S. pat. 2,021,-141 (Nov. 19, 1935).—A mark of definitely bounded translucency which does not impair the strength and writing or printing characteristics of paper is formed by applying to the paper in a printing press a composition comprising a substantially colorless resin or oleoresin, a solvent, very finely divided mineral matter and a suitable oil, in the form of a colloidal solution or emulsion in water. A satisfactory formula is: water solution of ammonium sulphate 7 to 12 parts, finely divided mineral matter 3 to

5 parts, precipitated chalk 1 to 2 parts, starch or flour 2 to 4 parts, castor oil 5 to 7 parts, Canada balsam 3 to 5 parts, gum turpentine 2 to 4 parts.—A. P.-C.

Process for the Manufacture of Paper or Board Bearing a Sort of Water Mark. J. W. Zanders. Belg. pat. 407,196 (Feb. 28, 1935).—A nearly or completely opaque impression is applied on the paper or board, which is then covered with a coating which prevents the impression from being visible by incident light.—A. P.-C.

Stabilizing Sheet Vulcanized Fiber. Herbert R. Stratford, assignor to Horace B. Fay. U. S. pat. 2,028,-932 (Jan. 28, 1936).—Vulcanized fiber sheets are heated (*e.g.,* at 200°F.) to expel moisture, and an atmosphere-exclusing sealing agent (preferably urea resins) in liquid form is applied to the surface.—A. P.-C.

Waterproof Plastic Paper and Method of Producing the Same. Earle V. Rodgers U.S. pat. 2,029,390, (Feb. 4, 1936).—Creped paper is treated with a solution consisting of Elemi gum, nitrocellulose, blown castor oil, toluene, isopropyl acetate, calcium stearate, antimony oxide and an organic solvent; and is then pressed and dried. A similar solution may be applied to one face of an uncreped paper, which is then dried and creped, after which the other side of the paper is similarly treated.—A. P.-C.

Waterproofing Cellulosic Materials. Harold Hibbert, assignor to Celanese Corp. of America. U. S. pat. 2,028,-776 (Jan. 28, 1936).—Cellulose materials such as films, foils, paper, etc., are rendered impervious to water in the liquid or vapor states by subjecting to the papers of a polymerizable liquid (preferably an unpolymerized vinyl compound), which is then subjected to a polymerization treatment (as by heating or subjecting to the action of light). —A. P.-C.

Moistureproof Paperboard and Method of Making the Same. Carl G. Dreymann assignor to Grant Paper Box Co. U. S. pats. 2,031,035 and 2,031,036 (Feb. 18, 1936).—*No. 2,031,035*—Two sheets of paper or board are brought along a progressive line into contact upon an interposed continuous body of adhesive while the latter is still in a fluid condition. This contact is effected without compression. Cooling ensues and as the temperature at which the adhesive sets is approached, the material is rolled under pressure. The interposed body of adhesive may be borne by a separate sheet or may be spread on the two sheets of paper or board. *No. 2,031,036*—A container board comprises a sheet or film of amorphous petroleum wax having a melting-point of 120° to 170°F. containing in solution a gel-forming substance (metal stearate, natural or synthetic resin, etc.). The film is enclosed between two fibrous sheets and constitutes an adhesive uniting the whole.—A. P.-C.

Making Grease and Moisture Proof Paper. John E. Schopp. U. S. pat. 2,021,947 (Nov. 26, 1935).—Paper or packages for wrapping or holding foodstuffs are treated with a composition containing modified starch, casein, ammonia, clay glucose or glycerine, concentrated latex (50% solids) and shellac (1 lb. of shellac dissolved in 8 lbs. of water).—A. P.-C.

Paper Impervious to Moisture, Water and Grease. Edmond H. Bucy, assignor to Atlas Powder Co. U. S. pat. 2,021,172 (Nov. 19, 1935).—A flexible, non-tacky paper, impervious to water, moisture, grease, etc., is obtained by combining with the paper an oil soluble phenol condensation product with a drying oil, casein, driers, plasticizers, the various ingredients being dissolved in suitable solvents.—A. P.-C.

Water Repellent Coatings and Materials Coated With Same. Irwin Stone. U.S. pat. 2,021,137 (Nov. 19, 1935).—Paper, *e.g.,* such as used for the manufacture of drinking straws, is rendered simultaneously waterproof and antiseptic by impregnating with paraffin containing 0.1% of 8-hydroxyquinoline benzonate.—A. P.-C.

Moistureproofing of Cellulose Transparent Paper. Silk J. and Rayon World 12:44-45 (Dec., 1935).—Methods and apparatus are described for coating film with cellulose ester, wax, and chlorinated diphenyl resin products.—A. P.-C.

Moistureproofing Cellulosic Material in Sheet Form. British "New-Wrap" Co., Ltd., and M. F. Monbiot. Brit. pat. 437,140 (Nov. 21, 1934); Belg. pat. 410,620 (Aug. 31, 1935).—Paper is treated with a solution (*e.g.,* in acetone) of a mixture of a cellulose ester, such as the nitrate or acetate, containing not less than 10% of its weight of rubber or chlorinated rubber dispersed in a chloroethane solvent, dried at 70° to 95°C., and deodorized by treatment with moist hot air; plasticizers also may be present. —A. P.-C.

Manufacture of Waterproof Paper Particularly Suitable as Weatherproof Posters. J. Knaggs and Portals Ltd. Brit. pat. 436,878 (April 20, 1934).—The formalin or hardening bath used as in, for example, Brit. pat. 391,350, is modified by addition of an adhesive (dextrin or flour), which is not rendered entirely insoluble in water by formaldehyde. Before drying, the paper is kept moist for about 24 hours.—A. P.-C.

Process for Water-proofing Paper and Other Fiberous Materials. Chemische Fabrik Florsheim, Florsheim. Ger. pat. 616,179 (June 11, 1932). Bitumen emulsions are added to the stock in the beater.—J. F. O.

Process for Water-Proofing Crepe Paper on Both Sides. Firma Pommernell, Berlin. Ger. pat. 615,028 (Dec. 12, 1930). Special arrangement of guide rolls which conducts the crepe paper to the paraffine bath, in such a manner that there is no pressure on the paper.—J. F. O.

Is the Paper Alone Responsible for Failure in Wrapping? Papier-Ztg. 60, no. 89:1555-1556 (Nov. 6, 1935). —Examples are given of paper-wrapped goods during transit, which indicate that the correct mode of wrapping is just as important as paper quality and that the best wrapping paper cannot compensate for incorrect wrapping methods.—C. J. W.

Writing Paper Having a White Copying Coating. G. Guggenbuhl. Belg. pat. 409,472 (June 29, 1935).—The copying coating applied to the back of writing paper is white and the copying is effected on dark colored sheets. —A. P.-C.

Boards

Box Board. W. Hoppner. Wochbl Papier fabr. 66, No. 45; 850-52 (Nov. 9, 1935). The author first gives the advantages of the box made of carton over that made of wood. The carton is either made from fresh wood pulp, fresh brown ground wood, or from old papers, and each process is briefly described. Air drying is the most favored method.—J. F. O.

Process and Apparatus for Making Branded Paper Board and Product Thereof. Charles C. Colbert, George E. Preston and Lloyd C. Daly, U. S. pat. 2,019,845 (Nov. 5, 1935).—In the formation of laminated board identification marks are printed with colored clay on one of the plies in such a manner as to be under a surface layer or layers, so as to be normally invisible and revealed when the surface is wetted.—A. P.-C.

Process for the Manufacture of Building Boards from Fiberous Materials. Fibroplast Akt. Ges. Schaffhausen, Switzerland. Ger. pat. 614,034 (March 16, 1933). During the de-watering and formation, the outside fibers are freed from the deposited substance for making the material water-proof, by washing with water.—J. F. O.

Arrangement for the Manufacture of Sound Dampen-

ing Building Boards from Fiberous Materials. Fibroplast Akt. Ges. Schaffhausen, Switzerland. Ger. pat. 617,804 (Sept. 24, 1933).—J. F. O.

Pressure Mat for the Pressing of Board Made of Wood Pulp. Magnus Hval, Huittingfoss. Nor. pat. 55,354 (March 22, 1933). Method for fastening the edges.—J. F. O.

Light Building Boards. Edgar Morath. Wochbl, Papierfabr. 66, No. 33: 624-25; No. 35: 661-64 (Aug. 17, 31, 1935). The author first mentions the important factors for building materials; static strength, fire security, permanence, space requirement, cost, heat protection and noise dampening. It is only during the last years that attention was given to the last factors in which building board of cellulose surpassed all other materials. The light building boards are then divided into two classes, boards of "wood wool" and fiberous plates; and products put out by the various manufactures in the pulp and paper producing countries are classified with their trade names. The general method of manufacture of each class is given with special mention to the more important such as Masonite, Insulite and Celotex.—J. F. O.

Building Material. William G. Dudleston, assignor to The Patent and Licensing Corp. U. S. pat. 2,032,084 (Feb. 25, 1936).—The invention relates to siding elements (imitating clapboard) made from a bituminous mastic and faced with roofing felt, and it provides that the felt project sufficiently beyond the base of the mastic so that it can be folded around and envelop the power edge.—A. P.-C.

Process and Apparatus for Treating Cardboard. Société Anonyme Ézoralithe. Fr. pat. 790,726.—A web of sheets of paper are impregnated by immersing (or otherwise) in a bath of molten metalloid. An apparatus for carrying out the impregnation continuously is described.—A. P.-C.

Apparatus for the Manufacture of a Composite Building Material. Emil C. Loetscher. U.S. pat. 2,028,616 (Jan. 21, 1936).—The invention provides an apparatus for producing building sheets or boards composed of finely divided wood particles and resins, etc., covered by Loetscher's U. S. pat. 1,959,375 of May 22, 1934. It is characterized essentially by a conveyor over which are advanced forms or molds of suitable size. The latter pass under a series of horizontal rotary screens, placed transversely relative to the direction of travel of the forms. The resin-coated wood particles are delivered uniformly through the screens on to the molds, and by using different materials in the first and last screens and in the intermediate screens, the sheets may be formed with a core differing from the surface layers. After forming, the sheets are pressed (preferably hot) to set the resins.—A. P.-C.

Synthetic Lumber. Charles E. Hartford assignor to National Cornstalk Processes, Inc., U. S. pat. 2,019,452 (Oct. 29, 1935).—Pulp such as that of cornstalks is treated with chemical solutions such as a wax emulsion and fireproofing material and alum, and a thick layer of the treated pulp is passed through a forming machine and press where excess of the solution is removed.—A. P.-C.

TAPPI Paper Bag Committee Organizes

Because of the growing importance of technology in the paper converting field the Technical Association of the Pulp and Paper Industry has organized a committee on Paper Bags. This is to be composed of Riley M. Bates, chairman, Thomas M. Royal & Company, Philadelphia; W. Noyes Baker, Bagpak Division of the International Paper Company, New York, N. Y.; T. M. Avery, vice president of the Union Bag and Paper Corporation, New York, N. Y.; C. M. Connor, Valley Forge Laboratories and the Glassine Paper Company, W. Conshohocken, Pa.

The TAPPI Paper Bag Committee intends to consider the following subjects:

1. General Requirements of Bag Papers—This subject will include standardization of paper specifications for the principal types of bags.

2. The development of practical methods of testing paper bags.

Experience has shown that there are a great many fundamental problems confronting the bag industry which are directly connected with paper, and which may be partially or wholly solved by the efforts of men who are deeply and yet impartially interested in them.

Anyone interested in participating in the work of this committee should get in touch with R. G. Macdonald, secretary of the Technical Association of the Pulp and Paper Industry, 122 E. 42nd street, New York, N. Y.

Copies of Series 18, Technical Association Papers Available

There are a number of copies of Series 18, Technical Association Papers (1935) available. This is a cloth bound volume of 668 pages containing the papers and discussion presented at the Technical Association meetings held in Portland, Ore., and at New York in 1935. Copies have been issued to members of the association.

Members may obtain additional copies at $2 per copy and non-members at $4.

The articles deal with labor cost of production; size manufacture and use; microscopical analysis; coated paper; turbines; paper properties; groundwood, sulphite and sulphate pulping; paper manufacture; fourdrinier wires; printing requirements; color; management, etc.

Copies are available at the Book Department, Technical Association of the Pulp and Paper Industry, 112 E. 42nd street, New York. Please send check with your order.

New York TAPPIMEN to Meet

The members of TAPPI in Northern New York will meet on September 26 at the Syracuse Hotel, Syracuse, N. Y. There will be a luncheon at 1:00 p.m. at the Drumlins Golf and Country Club which will be followed by a golf tournament.

Dinner will be at 7:30 p.m. after which John P. Hagenauer of the American Paper and Pulp Association will talk on Paper Machine Operating Efficiencies. Anyone interested will be welcome to attend. Please notify W. R. Steele, Solvay Process Company, Syracuse, N. Y.

Kalamazoo TAPPI Discusses Titanium

The Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry met at the Park-American Hotel, Kalamazoo, Mich., Tuesday evening, September 8, 1936. The speaker was William R. Willetts of the Titanium Pigment Company, Brooklyn, N. Y., who talked on "Titanium Pigments in the Paper Industry."

Index to Technical Section of Paper Trade Journal Available

The index to the Technical Section of the Paper Trade Journal is available covering the period January to June, 1936 (Vol. 102), and will be sent to those requesting them, without charge.

Some Relations Between Growth Conditions, Wood Structure and Pulping Quality*

By C. E. Curran[1]

Although wood is the basic raw material of a large section of the pulping industry and its cost constitutes probably one-third of the total cost of pulp production, the casual consideration which it receives is almost amazing. Everyone concedes there is a difference in species, and the industry has followed spruce into some exceedingly remote areas, but to the "right wing" of our pulp industry "wood is wood" and that is all there is to it.

Even technical men seem blind to the significance of wood. Many thousands of dollars have been spent in research on pulping in which careful attention was paid to small differences in liquor composition, chemical concentrations, pressure and temperature control, and little or no heed given to the raw material on which this painstaking work was done. I confess to several such misapplications of effort myself.

It must be admitted that some cognizance is taken of wood under certain circumstances—especially when things go badly in the pulping process. The pulp mill superintendent's best alibi is a "poor wood." Our Swedish friends have reported that wood grown on a north slope differs in pulping quality from that growing on the south slope. A mill I know of localized their spruce supply for many years to a certain area where experience showed they obtained superior wood. It is, in fact, a matter of common knowledge that conditions of growth influence wood properties which, in turn, are reflected directly in the pulp produced, both as to yield and quality. Research on such factors has been reported in the European literature. In a recent report of the Norwegian Forest Experimental Department, Gustav G. Klem gives an account of contemporary work on tree growth-pulp quality relations, and refers to the work done by Hagglund, Kinnman, Johnson, and Ulfsparre along similar lines. But so far as American operation is concerned little definite information is available on the nature or effect of these differences.

During the past few years the U. S. Forest Products Laboratory has engaged in a comprehensive study of the pulping of southern pines, especial emphasis being placed on the relation of growth conditions to pulp quality. The significance of these southern species in the pulping field is tremendous. The past twenty years has seen the development of kraft pulping in the South to a point where it dominates the American production of this grade. We are witnessing a continuing expansion of that industry at this moment and also the development of white papers from the southern pine sulphate pulps on an enormous scale. Dr. Herty's work on newsprint production from southern pine has directed earnest attention toward the South as a factor in that large tonnage field. Any day may see the commencement of a newsprint industry based on southern pines. If the reports of saw fly ravages in Canadian spruce are true, that day may come even earlier than is anticipated. At any rate the industry has always followed cheap wood and the South possesses this resource.

Virgin Stands in South Gone

Our job at Madison is to provide factual information which will be of value in the industrial and the land-use problems which arise as the pulping industry progresses along with forestry practice. This paper presents a bird's-eye view of the types of wood which the new stands of the South will provide and how these types react in pulping operations.

I use the term "new stands" advisedly. The virgin timber of the South is practically gone. In its place are tremendous areas of second growth, differing in character markedly from the virgin trees with which the early pulp mills had to deal. It stands to reason that these new trees may differ from the old trees. They have in many (or most) instances developed under an entirely different environment than their ancestors. They have responded to this changed environment in internal and external characteristics—both physical and chemical in nature—and their behavior under pulping procedures is likewise different.

Let me give credit to C. H. Herty for focusing on a very important growth characteristic of young slash pine. He noted that the new young growth of this species is light in color, is free from heartwood and contains less pitchy element than the old trees. His development of this idea is a matter of record.

There are also other growth factors which are significant in the pulping of southern pines. Anyone who investigates the species cannot fail to be impressed by the varying qualities of springwood and summerwood, the difference in growth rate, etc., which are found in different sticks, even of the same species. A factor of importance is the amount of heartwood as related to the amount of the sapwood. Recently, particular attention has been focused

* Presented at the Joint Technical Meeting of the Technical Association of the Pulp and Paper Industry and the Technical Section of the Canadian Pulp and Paper Association, Montreal, P.Q., Aug. 3-7, 1936.

[1] Member TAPPI, Principal Chemist, Pulp and Paper Section, Forest Products Laboratory, maintained at Madison, Wis., in cooperation with the University of Wisconsin.

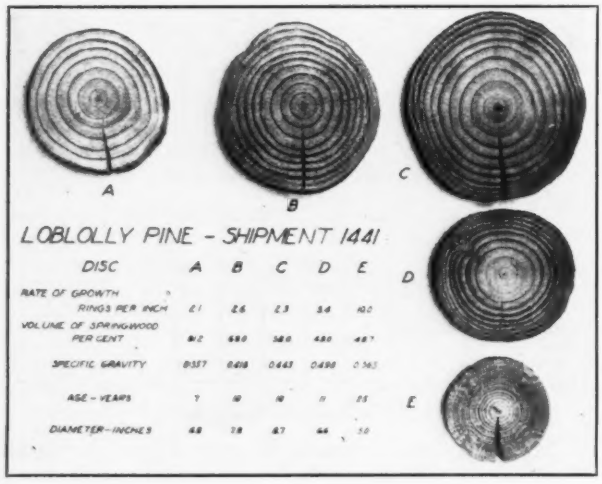
A
B
C
D
E
LOBLOLLY PINE - SHIPMENT 1441
DISC A B C D E
RATE OF GROWTH RINGS PER INCH 21 26 23 34 10.2
VOLUME OF SPRINGWOOD PER CENT 842 680 560 480 467
SPECIFIC GRAVITY 0.537 0.478 0.443 0.438 0.365
AGE - YEARS 7 10 10 11 15
DIAMETER - INCHES 4.8 7.8 8.7 9.4 10.0

FIG. 1.

Growth variations in loblolly pine pulpwood from the same stand.

on the importance of such abnormal growth characteristics as compression wood and related abnormal fiber.

Growth Conditions vs Species Differences

A systematic investigation of these growth conditions has shown them to have large significance in pulping—so large that, in our opinion, growth condition may transcend species difference in importance, and the successful development of southern pine pulping is largely tied in with their intelligent application. Forestry practice will undoubtedly be governed by them. And what is true of the southern pines is, in more or less degree, true in all pulpwoods.

To illustrate some of the more striking of the conditions which will be encountered in the pines, Fig. 1 is presented showing cross sections of loblolly pine all coming from the same area.

In this particular sample one important characteristic —heartwood—is lacking. Heartwood is present in the older trees and affects pulp quality because of its dark color and the fact that sulphite liquors will not reduce it. The illustration does, however, provide a striking range for densities, and of springwood and summerwood volumes and ratios. The bearing of density on pulp yield is well known. Lower densities mean lower volume yields. A digester charge of a low specific gravity wood means less pounds of pulp in the blow pit and lower yields per cord, regardless of the weight yields on a given species.

A more significant fact with the pine pulpwoods, however, is the divergent properties of the springwood and summerwood fibers. It is common knowledge that springwood fibers are thinner-walled and more flexible than summerwood fibers (Fig. 2). This difference exists in all species but is especially characteristic of the pines. In pulping it is reflected markedly in the nature of the pulps—especially in the surface and sheet characteristics. Fig. 3 illustrates two sulphite pulp sheets where these differences are especially noticeable. In processing, the thin-walled

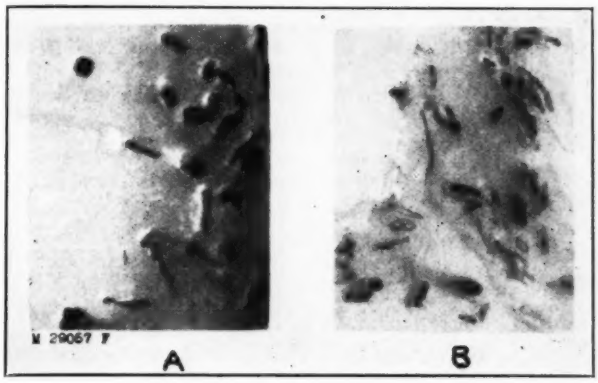

FIG. 4.
Comparison of kraft pulp fibers from southern pine springwood and summerwood, with a Swedish kraft. A. Southern pine kraft fibers. B. Swedish kraft fibers.

springwood fibers collapse to ribbon-like fibers forming dense well-knit sheets, whereas the stiff thick-walled summerwood fibers remain in tubular form, resist processing and form coarse textured sheets, entirely different in properties. In Fig. 4 a striking illustration is given for these two types of fibers, showing the collapsed thin-walled springwood and the resistant summerwood tracheids when in the form of pulp. A comparison is made in this figure between a commercial Swedish kraft pulp and a kraft pulp produced from Southern pine.

Such a diversified behavior is obviously significant in pulping and papermaking. In slower growth woods, or in woods where the ratios of the two fiber types are maintained consistently, pulping conditions may be selected which will give uniform results. However, as is the case with these pines, when widely variant ratios are encountered some cognizance must needs be taken or nonuniformity of pulp is bound to result.

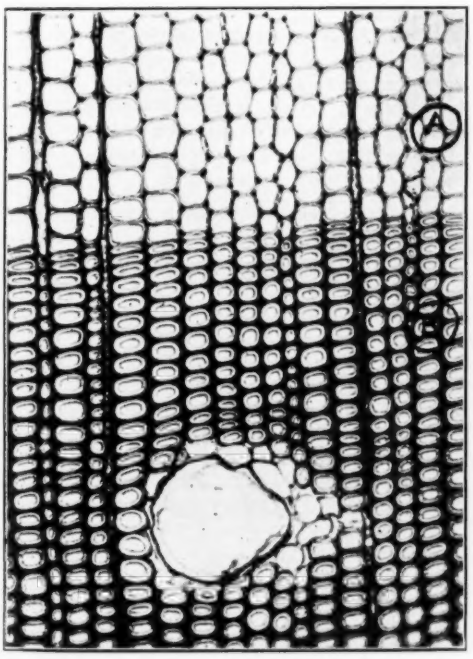

FIG. 2
Cross section of southern yellow pine showing difference in springwood and summerwood fibers. A. Springwood fibers. B. Summerwood fibers.

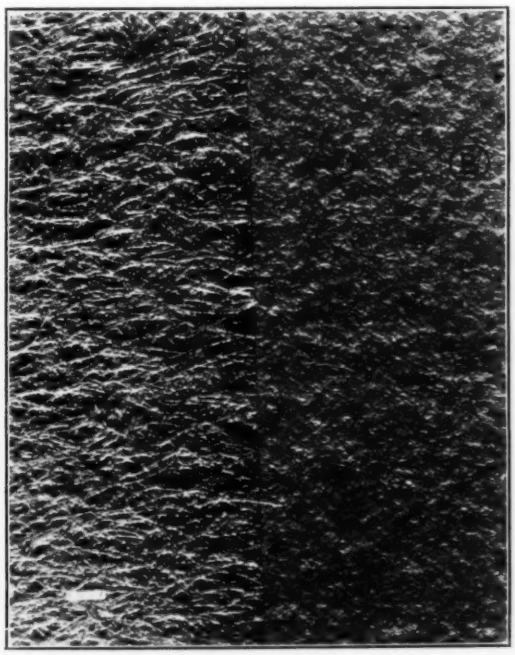

FIG. 3.
Surface characteristics of two sulphite pulps from springwood and summerwood respectively. A. Pulp from summerwood fibers. B. Pulp from springwood fibers.

There seems, too, a difference in the nature of pines depending on their rate of growth. At present no difference in fiber structure can be specified to account for this but the fact remains that in mechanical pulping, particularly, such differences are observed and this factor needs to be taken into account.

Effect of Abnormal Wood

In recent work, reported at the winter meeting *(1)* the effect of abnormal wood, such as compression wood, has been noted. European investigators have recognized the significance of such wood in pulping for some time. Compression wood occurs frequently in rapidly growing trees and differs markedly from normal wood in chemical composition, in physical properties, and in pulping properties. It invariably yields weaker pulps in lower yields than are obtained from normal wood. Compression fibers are formed when prevailing winds put the trees under a constant tension. Compression occurs in leaning trees, on the underside of limbs, or under any condition of stress which may occur in growth. In southern pines we find frequent evidence of compression in the butt logs. Such logs frequently differ markedly in pulping properties from sticks taken higher up in the tree.

TABLE I.—CHEMICAL ANALYSIS OF LOBLOLLY PINE. ENTIRE WOOD, SPRINGWOOD, SUMMERWOOD, AND COMPRESSION WOOD

				Entire wood	
	Spring-wood [1]	Summer-wood [1]	Com-pression wood [1]	Fast rate of growth	Slow rate of growth
Cellulose, per cent	58.3	59.1	46.2	58.2	58.9
Alpha cellulose, per cent	43.9	46.4	34.6	43.1	46.5
Lignin, per cent	28.8	27.4	35.2	27.2	28.5
Pentosans in cellulose, per cent	11.6	10.4	...	10.0	9.1
Total pentosans, per cent	17.9	12.6	12.2	13.0	11.9
Solubility in:					
Hot 1 per cent sodium hydroxide solution, per cent	14.0	12.9	12.6	12.7	9.5
Hot water, per cent	...	2.0	...	2.6	1.9
Alcohol-benzene, per cent	4.2	2.5	2.7	4.1	2.8
Ether, per cent	3.6	1.5	1.3	3.0	2.0

[1] The samples were sawed from discs on a band saw. They are estimated to contain at least 90 per cent of the desired kind of wood.

The wood associated with compression wood is also frequently abnormal. Chemically, this associated wood is not much different from normal wood but microscopical examination shows its fibrils to lie at a greater angle than those of normal fibers and this circumstance may be a clue to its properties. Trees of so-called eccentric growth are frequently found to contain compression and associated abnormal fibers, as are also trees where the growth in early life has been extremely rapid. These evidences

TABLE II

GENERAL PROPERTIES OF GROUNDWOOD PULP FROM VARIOUS TYPES OF LOBLOLLY PINE COMPARED TO THE AVERAGE OF COMMERCIAL NEWSPRINT GROUNDWOOD PULP

RATE OF GROWTH	SPRING-WOOD CONTENT	WITHOUT HEARTWOOD				WITH HEARTWOOD			
		POWER CONSUMED	STRENGTH	COLOR	PITCH	POWER CONSUMED	STRENGTH	COLOR	PITCH
FAST	HIGH	SLIGHTLY ABOVE AVERAGE	GOOD	GOOD	NO EVIDENCE	NO TESTS	NO TESTS-PROBABLY SAME AS FOR MEDIUM SPRINGWOOD		
	MEDIUM	AVERAGE	GOOD	GOOD	NO EVIDENCE	AVERAGE	GOOD	GOOD	NO EVIDENCE
	LOW	AVERAGE	GOOD	GOOD	NO EVIDENCE	NO TESTS	NO TESTS-PROBABLY SAME AS FOR MEDIUM SPRINGWOOD		
SLOW	MEDIUM	SLIGHTLY BELOW AVERAGE	FAIR	FAIR	SOME EVIDENCE	AVERAGE	GOOD	POOR	VERY EVIDENT
	LOW	SLIGHTLY BELOW AVERAGE	FAIR	FAIR	SOME EVIDENCE	NO TESTS	NO TESTS-PROBABLY SAME AS FOR MEDIUM SPRINGWOOD		

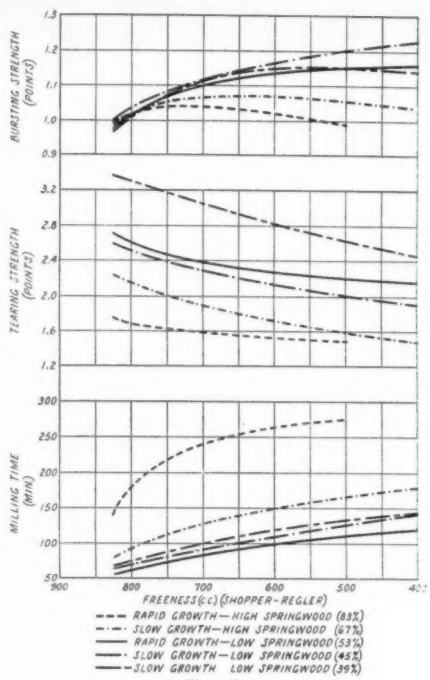

FIG. 5.

Effect of growth conditions in pulping of southern pine by the sulphate process.

may be the beginning of a means of classifying good and bad pulpwood although they are by no means infallible.

Growth differences are generally speaking not evidenced in chemical differences. An exception to this is compression wood but most other types are not readily distinguishable (at least as far as southern pines are concerned) through such analytical constants as we can adduce at the present time. Table I presents some data in this connection.

Of course specific chemical components, such as the phlobatannins or phlobaphene dyes found in certain species, have a bearing here, although their influence is more largely governed by difference in species than by difference in growth in the same species.

Influence of Growth Conditions

The influence of growth condition in pulping tests may be illustrated by the experimental results which have been obtained at the U. S. Forest Products Laboratory recently. Table II shows data compiled with reference to mechanical pulping. In this process fast growth wood appears preferable. Lower power consumption, better strength, good color and absence of pitch characterize mechanical pulp from such wood, whereas these qualities are not so satisfactory in slow growth wood, regardless of the fact that the amounts of summerwood and springwood may be practically equivalent.

Application of the sulphate process to the southern pines also shows that growth rate, springwood-summerwood ratio, and abnormal types, such as compression wood and other wood of high fibril angle, have considerable bearing on the physical properties of the pulps obtained.

These differences are especially noticeable in the color, surface appearance of the pulps, in their bursting and tearing strengths, and in the time required to reduce freeness in treating the pulps in a pebble mill where the pulps are produced under identical conditions. See Fig. 5

In comparing rapid and slow-growth loblolly pine sulphate pulps of high and low springwood content, the pulps from high springwood material have a lighter color, finer texture, and smoother surface and thus lend themselves to the production of better formed sheets, while the high summerwood pulps are coarse, bulky, darker, more porous, and have a somewhat higher bleach requirement. The differences noted in bursting strength of pulps from the varying wood type are not very consistent but in tearing strength sulphate pulps made from trees high in summerwood show much higher values than those obtained from the ribbon-like fibers of springwood. This latter advantage for summerwood pulps has thus far been evidenced regardless of growth rate, but in trees of rapid growth where a high percentage of springwood is present there is in addition a preponderance of thin-walled cells accounting for lower density and a tendency to lower strength pulps.

Again the appearance of compression wood and other abnormal types associated with it is a signal of a wood type to be avoided where uniformity of digestion and pulp quality, high strength, and easy-bleaching pulps are desired. These abnormal types of wood produce pulps as widely different in yield, strength properties, and bleach requirements as would be obtained from two unrelated species. Yields and strength properties, especially tearing strength, are markedly lower and the pulps are extremely shivy and have a much higher bleach requirement, so much so that they appear to be practically unbleachable. Therefore, in selecting wood for the manufacture of bleached kraft products, high grade wrappings, bags, and board stocks care should be taken to select wood of proper characteristics as indicated in the foregoing discussion.

Comparison of Sulphite Pulps from Four Types of Wood

When the four different types of wood, *i.e.*, rapid and slow growth loblolly pine of high and low springwood content, are cooked under the same conditions by the sulphite process, difference in yield, bleach requirements, and strength properties result, the physical properties of the pulps covering nearly the entire range of the present commercial sulphite pulps. By increasing the cooking time in increments of 15 minutes and plotting the results against bleach requirement, it is possible by interpolation to compare the results at any given bleach requirement. Fig. 6 shows the results thus obtained for a bleach requirement of 15 per cent. It also shows the values for strength, milling time, and solid fraction corresponding to freeness values of 800 and 550. The following trends are evident:

At a maximum temperature of 145 deg. C. about 15 minutes longer were required to produce pulp of the same bleach requirement from the wood having a low percentage of springwood than from the wood containing a high percentage. Lower maximum temperatures would, of course, increase this difference.

The highest yield was obtained from the fast growth wood containing a high percentage of springwood, and the lowest yield was obtained from the fast growth wood having a low percentage of springwood, accounted for by the presence of compression wood and other abnormal wood.

The highest unbleached color as measured by the blue reading was also obtained from the fast-growth wood containing a high percentage of springwood, and the lowest color from the fastgrowth wood having a low percentage of springwood.

Greater absorbency and porosity are indicated by the low values obtained from the slow-growth wood and also from the wood having a low percentage of springwood.

The highest bursting strengths were obtained from the fast-growth wood having a high percentage of springwood and from the other extreme, slow-growth wood having a low springwood content.

The tearing strength more than any other property, was dependent upon the springwood content, decreasing as the amount of springwood increased.

The milling time was greatest for the fast-growth wood containing a high percentage of springwood and was least for the fast-growth wood having a low percentage. However, the milling time is probably the most variable factor in the pebble mill testing.

The solid fraction of the test sheets decreased with decreasing springwood content and also decreased with decreasing growth rate.

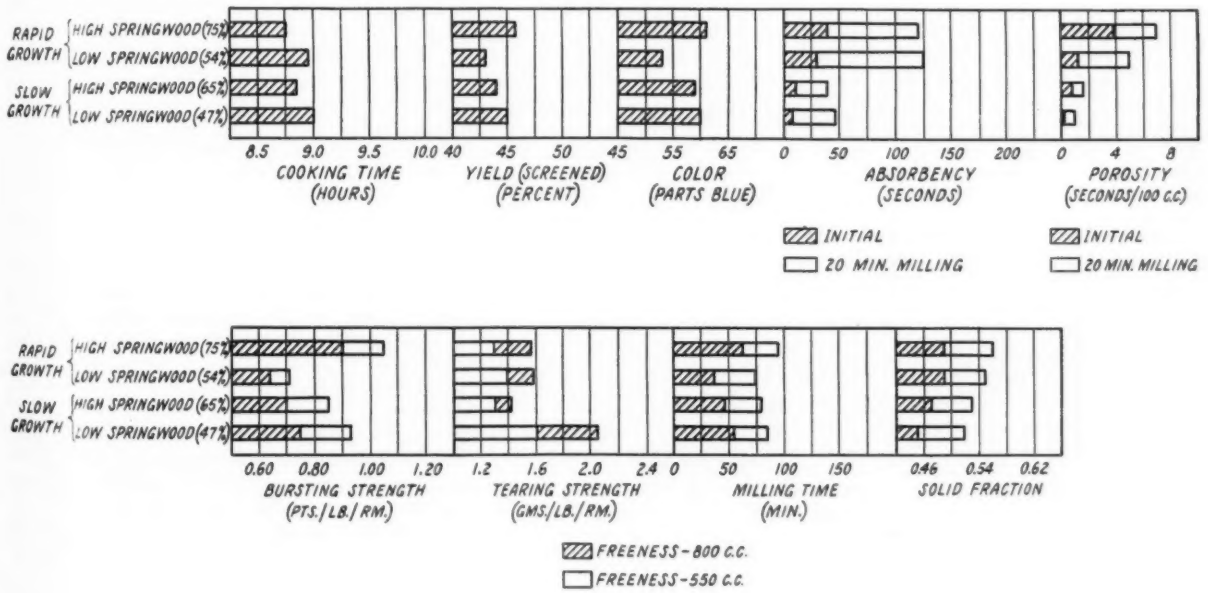

FIG. 6.

Effect of growth conditions in pulping of southern pine by the sulphite process.

A comparison of the pulp from compression wood with that obtained from normal wood in the same log gave a 10 per cent reduction in yield, a much darker unbleached color, and a much higher bleach requirement. Although the pulps from the normal wood required only 15 per cent of bleach, the pulp from compression wood was practically unbleachable. Also, the compression wood pulp showed a reduction of approximately 50 per cent in strength properties.

It was noted in many instances, particularly in the butt logs of the fast-growth wood, that decreases in yield, strength, and other properties were more than would likely be accounted for by the amount of compression wood present. An examination of this wood revealed, among other abnormalities, a high slope of the fibrils in the secondary layer of the fibers relative to the fiber axis. This effect is illustrated in the above data obtained from the sample of fast-growth wood of low springwood content which gave a low yield, color, and strength.

Evidence that the above differences in pulp properties resulting from different growth characteristics in the wood are carried through to the finished paper was obtained in experimental runs of pine newsprint, even though the sulphite pulp constituted only 20 per cent of the furnish. The high tearing strength and high porosity exhibited by the pulp from the slow-growth wood of high summerwood content produced corresponding results in an appreciable degree in a newsprint paper made from them.

The data which have been presented in illustrating the effect of growth conditions are by no means complete. Later publications on this subject will elaborate and present in more detail the interesting facts which are being developed in this study.

It is merely intended to emphasize what is so increasingly evident: Conditions of growth do markedly effect pulp yield and pulp quality. As new situations in wood supply are faced, new means must be adopted to cope with the problem of maintaining quality. Approximately one-third of the entire pulp cost is in the wood. More care in selecting this material is essential if pulp uniformity is to be attained. Southern pine pulpwood shows the effects of growth condition to an accentuated degree and illustrates the point to a good advantage but the same problem confronts all pulp producers. Wood is not just wood but is a widely varying raw material. Cognizance must be taken of wood properties and competent methods devised to meet this situation with our basic raw material.

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Sulphite Requirements for High Speed News Machines

By R. T. Steedman[1]

Abstract

A few sentences describing generalities, but no experimental work or test figures are given.

The use of Specifications is outlined.

The importance of making the Sulphite to blend into the Groundwood and other local machine features are noted.

The average Sulphite stock conditions in high speed News Mills is cited, and the necessity for uniformity of quality is outlined.

These data are not based on any experimental work, and, so, no definite specifications will be given.

In years past, a great deal of very interesting investigational work was carried out by TAPPI on sulphite pulp specifications. While the results may not have been applicable to the trade generally, yet it was an attempt at a scientific control of the sale of this commodity, and a great deal was brought out in the discussions to show how fickle a job it was to specify and correlate test figures in such a way as to classify clearly just what was required in pulps for certain furnishes. Here we will discuss in a few sentences what are ascribed as desirable characteristics for a high speed news sulphite.

It may be expressed, first, that the controlling factor, regarding what kind of sulphite is required, is dependent on the methods that it is necessary to use in order to get the desired freeness out of the groundwood stock. In other words, do the wood supply and the type of grinders allow you to keep stone surfaces that will pull out the fiber and get a comparatively long and fine stock, or do you have a shorter, rougher, chunky pulp? A great deal of the requirements of the sulphite depend on this factor and other pulp mixing and paper machine conditions; and, so, to stipulate requirements of sulphite in terms of physical and chemical tests for that one part of the furnish would indeed be a difficult matter.

Generally, under what might be termed average stock conditions as they exist in high speed news mills, one might say that the sulphite requirements most suitable would be the hardest stock possible, consistent with the minimum of shiners appearing in the sheet. As many other factors also come into this, such as amount of processing of the pulp, moisture in the sheet, and calendering, one has to specify hardness in a wide range of bleachability of between 23 per cent bleach and 33 per cent bleach.

The sulphite furnish has also attributed to it many of the difficulties encountered in machine operation, as well as qualities of the finished stock, besides being on the hard and free side, must also be of good color and free from pitch and slime.

In the matter of high speeds, we come into drainage problems; so, it is more important than ever that the type of sulphite should blend into the groundwood in such a way that the best draining mixture for these speeds is obtained.

Again, the sheet leaving the wire and at the presses must have sufficient web strength to carry it over; consequently, your sulphite when mixed with the groundwood must form a web that will give the maximum strength necessary. This is a matter for each mill to work out for itself; generally a free, strong sulphite is best. And as you speed up, all impediments to successful running and variations in quality increase in importance, and the value of uniformity has to be stressed more and more.

This leads one to the conclusion that the important factors are those connected with the characteristics that lead to uniformity, strength, and absence of pitch.

[*] Presented at the International Technical Meeting of the Technical Association of the Pulp and Paper Industy and the Technical Section of the Canadian Pulp and Paper Association, Montreal, P. Q., August 3-7, 1936.

[1] Anglo-Canadian Pulp & Paper Mills, Ltd., Quebec, P. Q.

Contribution to the Knowledge of the Nature of Lignin Derivatives*

By Fritz E. Brauns[1]

Abstract

Recent articles on phenol- and glycol-lignin by W. Fuchs, and on lignin sulphonic acid by Freudenberg, have been analyzed and the results of these authors have been compared with those presented on the same subjects by Brauns and Hibbert and co-workers.

Fuchs's equivalent weight values for phenol- and methoxy glycol-lignins have been converted into molecular weights, using the empirical formula for lignin proposed by Brauns and Hibbert. The resulting values are almost identical with molecular weight values assigned to corresponding compounds by Brauns and Hibbert and co-workers.

Freudenberg's equivalent weights of 962 and 933 for lignin sulphonic acid agree very well with those found by King, Brauns and Hibbert—954 and 936—indicating that the same type of lignin sulphonic acid was being investigated.

In a paper recently published by W. Fuchs *(7)* this author reports on some experiments with phenol lignin and methoxy glycol lignin from spruce wood. Since I have published with Hibbert and co-workers *(1)* some papers on the same subject, it is of interest to compare the results obtained by Fuchs and ourselves.

In regard to the yield of crude phenol lignin, Fuchs obtains only 40 per cent on the wood meal used, while Buckland, Brauns and Hibbert *(4)* report 67 per cent. This difference may be due to the fact that the latter authors exclude the water as far as possible, using a solution of anhydrous hydrogen chloride in dry ether instead of concentrated aqueous hydrochloric acid as applied by Fuchs. This difference in the yield may also account for the discrepancy in the methoxyl content of the crude phenol lignin which is found by Fuchs to be 9.2 per cent while that of the crude product prepared by Buckland was 6.4 per cent. Fuchs as well as Buckland separates the crude phenol lignin into two fractions, one insoluble in ether and one soluble in ether. The methoxyl contents of these compounds as prepared by the two authors check each other well within experimental error. Fuchs found for the ether insoluble fraction 10.2 per cent; for the ether soluble fraction 5.0 per cent CH_3O; Buckland 10.3 per cent and 5.3 per cent respectively. Fuchs separated his fractions further, but these fractions do not show a remarkable difference in their chemical compositions. It seems that these fractions differ only in their physical properties for the analysis of Fuchs' ether insoluble phenol lignin agrees very well with that found by Buckland for her corresponding fraction. The analytical data for the ether soluble fractions show somewhat larger differences.

The methoxyl content of the methoxyl glycol lignin found by Fuchs to be 17.4 per cent is lower than that previously reported by the same author *(8)* and also lower than that found by Brauns and Hibbert and co-workers *(9)* who, in agreement with Fuchs's previous result, found 20.5 per cent OCH_3 uncorrected. This discrepancy between our result and Fuchs's latest value is hard to explain. Since the presence of glycol in glycol lignin is only proven indirectly by use of methoxy glycol instead of glycol, it may be possible that Fuchs split off some methoxyl groups at the higher temperature used in the preparation of his methoxy glycol lignin or else the methoxy glycol has not reacted with the lignin. Rassow *(13)* has again recently claimed that in the preparation of glycol lignin, glycol does not enter the lignin molecule. He bases his conclusion on the fact that Hibbert and Marion *(10)* could decrease the methoxyl content of their glycol lignin by hydrolysis from 18.5 per cent to 16.8 per cent by splitting off of glycol which gives in the Zeisel methoxyl determination an apparent methoxyl content. In a more recent paper by Brauns and Hibbert and co-workers *(9)* however, it was shown that, contrary to the results of Hibbert and Marion, carefully purified glycol lignin is not hydrolysed and has the same methoxyl content as previously reported by Rassow *(12)*. The difference of approximately 3 per cent in the methoxyl content of Fuchs's latest product and that prepared by Brauns and Hibbert and co-workers *(9)* corresponds to about one methoxyl group on the basis of a molecular weight of 930 for methoxy glycol lignin as found by Brauns and Hibbert.

The presence of glycol in glycol lignin has given rise to objections with regard to the methoxyl determination and a correction is to be made for the apparent methoxyl from the glycol. Fuchs believes that a modification of the method of Zeisel would eliminate this error, but even with this modification, glycol derivatives still give an apparent methoxyl content. The amount of methoxyl from the glycol however, is so small in the case of high molecular weight derivatives of glycol lignin that it can be neglected, as was shown by Brauns and Hibbert *(2)*.

From his phenol lignins and his methoxy glycol lignin Fuchs determines the equivalent weights and it is of great interest to compare the results of Fuchs with those molecular weights calculated on the basis of an empirical formula for a lignin unit proposed by Brauns and Hibbert *(3)*.

For the ether insoluble fraction Fuchs finds an equivalent weight of 244. According to the formula proposed by Buckland, Brauns and Hibbert, the ether insoluble phenol lignin contains five acid hydroxyl groups capable of methylation with diazomethane. In order to obtain the molecular weight for the ether insoluble phenol lignin from the equivalent weight of 244, the latter therefore has to be multiplied by 5, which gives 1220. The value found by Buckland is 1216.5.

For the ether soluble phenol lignin, Fuchs finds an equivalent weight of 149. When I was calculating with Mrs. Buckland the composition of the ether soluble phenol lignin on the basis of the analytical data of the various derivatives, it was necessary to choose between a lignin compound with 15 phenol groups or with 21 phenol groups. With the higher phenol content, the analytical data fall more closely together, but the data of the ether soluble phenol lignin fit better to a compound with 15 phenol

* Presented at the International Technical Meeting of the Technical Association of the Pulp and Paper Industy and the Technical Section of the Canadian Pulp and Paper Association, Montreal, P. Q., August 3-7, 1936.

[1] Member TAPPI, Institute of Paper Chemistry, Appleton, Wis.

groups, and therefore the latter was adopted. In the formula for the ether soluble phenol lignin there are sixteen free hydroxyl groups capable of methylation with diazomethane. In order to arrive at the molecular weight for this lignin unit, the Fuchs value of 149 has to be multiplied by 16, giving 2384, which compares well with the molecular weight found by Buckland, i.e., 2358. This supports the structure with fifteen molecules of phenol.

For the methoxy glycol lignin Fuchs finds an equivalent weight of 463. As mentioned before, the methoxy glycol lignin of Fuchs contains one methoxyl group less than that prepared by Gray *(9)*. If this missing methoxyl group has been split off from an acid hydroxyl group (enolic hydroxyl group) Fuchs has two acid hydroxyl groups in his methoxy glycol lignin unit, which figures to a molecular weigh of 926. That found by Brauns, Hibbert, and co-workers is 930.5.

In an earlier experiment Fuchs in co-operation with Bettelheim *(6)* reported that phenol lignin on distillation with 12 per cent hydrochloric acid loses 40 per cent of its weight. The authors do not say what fraction of phenol lignin they used. On a distillation of ether insoluble phenol lignin with 12 per cent hydrochloric acid carried out at the Institute of Paper Chemistry by E. H. Williams, this phenol lignin did not lose weight to any extent as is shown by the fact that after a three-hour distillation with 12 per cent hydrochloric acid the phenol lignin was recovered in a nearly quantitative yield having the same methoxyl content as the original product.

On comparison of the behaviour of both phenol lignins towards hydriodic acid under equal conditions as described in Fuchs's paper: Table VII, experiments No. 9 and 13, and No. 10 and 16, the amount of phenol split off from the ether insoluble was found to be 13.1 per cent and 15.9 per cent respectively, and from the ether soluble, 19.1 per cent and 26.5 per cent respectively. These quantities bear no ratio to the differences of the amounts of phenol present in these compounds. Were the three and fifteen phenol molecules of the phenol lignins split off completely, their losses would be 23 per cent and 60 per cent respectively. In any case the comparatively drastic conditions used by Fuchs for the cleavage of phenol from the phenol lignins proves that the phenol is in a fairly firm linkage in both compounds.

Recently a paper was published by Freudenberg *(5)* on lignin sulphonic acid and it is of interest to compare his results with those obtained on the same subject by King, Brauns, and Hibbert *(11)* which were ready for publication October, 1934. It is a pleasure to find further agreement and mutual confirmation of Freudenberg's and our results. The most striking agreement is to be found in the molecular weights of the lignin sulphonic acids, which really proves that Freudenberg and King worked with the same type of lignin sulphonic acid. Freudenberg found by various methods an equivalent weight for his lignin sulphonic acid of 962 and 933, while King found 954 and 936, calculated on the basis of the formula $C_{42}H_{32}O_6(OH)_5(OCH_3)_5$ for lignin.

In a paper recently published by Tomlinson and Hibbert *(15)* these authors state that "a technique has been developed whereby lignin sulphonic acids may be methylated without the simultaneous loss of sulphur observed by previous investigators." This may give the impression that these authors have found a special method which permits the methylation of lignin sulphonic acid without elimination of sulphur. It is a well known fact that lignin sulphonic acid prepared under mild conditions, as is the case at the beginning of the cook in the sulphite process and as used by King, Brauns, and Hibbert *(11)* contains loosely bound sulphurous acid. This loosely bound sulphurous acid is split off by alkali which is present in the methylation process. On comparison of the conditions of methylation used by King with those used by Tomlinson, it can be seen that King's conditions are actually somewhat milder. Unfortunately in King's paper it is not mentioned that he used 30 per cent sodium hydroxide solution by volume, but from his thesis, (Pt. I, pp. 48, 100, and 106) it can be seen that "not more than a 5 per cent excess of sodium hydroxide" was used (although actually the excess was about 9 per cent) while Tomlinson used an excess of 11.7 per cent. Since the methylation conditions used by King and Tomlinson are nearly the same, the difference in the loss of sulphur cannot be due to the method of methylation. It seems rather that Tomlinson had no loosely bound sulphur in his lignin sulphonic acid which was prepared under more drastic conditions (higher SO_2 content of the cooking liquor, and longer heating).

In his recent paper, Freudenberg *(5)* states in a footnote that diazomethane is not a suitable reagent for distinguishing phenol hydroxyl groups from aliphatic hydroxyl groups, and cites the methylation of starch. On repeating these experiments with various kinds of starches at the Institute of Paper Chemistry, it was found that in the absence of water no appreciable methylation takes place although in the presence of water a methylated starch with 23 per cent MeO can be obtained in one methylation, which is in agreement with Schmid *(14)*. On account of this fact, all the methylations of lignin and lignin derivatives recently published with Hibbert and co-workers *(1)* were carried out under exclusion of water, except in the case of the lignin sulphonic acid *(11)*. The presence of a phenolic hydroxyl group in the latter is also proven by Freudenberg *(5)*. It should be noted that the hydroxyl group in lignin capable of methylation with diazomethane may conceivably be enolic in character.

The lignin literature is full of contradictions, not only in the same experiments carried out by different investigators, but also in the same experiments reported by the same authors. It should be the goal of the research chemist not to disprove others' work, but to confirm it. It is true that a confirmation of other investigators is not always possible in lignin chemistry on account of the fact that in most cases lignin, or lignin derivatives, of different properties are used. If, however, the preparation of lignin with the same properties can be prepared by independent investigators using the same working conditions, it should be possible to set up some direction for the preparation of standard lignin compounds. The agreement of the results of various investigators, as they are discussed in this paper, shows that it is possible, using always the same conditions, to obtain similar results in lingin investigations, and that discrepancies are due mostly to the application of different experimental conditions.

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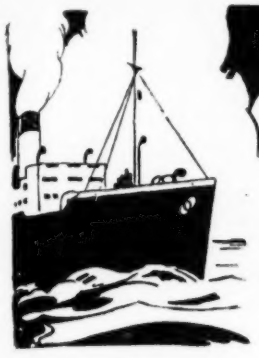

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Castle & Overton, Inc., *Collamer*, Havre, 49 bls. rags; J. T. Flannery, *Collamer*, Havre, 390 bls. rags; D. M. Hicks, Co., *Collamer*, Dunkirk, 11 bls. new cuttings; E. J. Keller Co. Inc., *Collamer*, ———, 17 bls. rags; ———, *Georgic*, London, 7 bls. rags; ———, *McKeesport*, Leith, 81 bls. bagging; Chase National Bank, *Scanpenn*, Gdynia, 35 bls. rags; S. Shapiro & Sons, *Scanpenn*, Gdynia, 73 bls. rags; Philadelphia National Bank, *Westernland*, Antwerp, 191 bls. rags; ———, *Westernland*, Antwerp, 106 bls. bagging; J. Cohen Son Co. Inc., *Samaria*, Liverpool, 5 bls. newcuttings; ———, *Samaria*, Liverpool, 18 bls. rags; Royal Manfg. Co., *Shinko Maru*, Shanghai, 100 bls. cotton waste; W. R. Grace & Co., *Shinko Maru*, Shanghai, 200 bls. cotton waste; Loumar Textile By Products Co., *Shinko Maru*, Kobe, 100 bls. bagging; Continental Bank Trust Co., *Black Gull*, Rotterdam, 89 bls. bagging; E. J. Keller Co. Inc., *Black Hull*, ———, 191 bls. flaxwaste, 217 bls. rags; B. D. Kaplan, *Black Gull*, Antwerp, 16 bls. rags; R. Blank, *Exochorda*, Alexandria, 269 bls. old cottons; Castle & Overton, Inc., *Exochorda*, Alexandria, 218 bls. rags, 88 bls.

bagging; W. Steck & Co., *Exochorda,* Alexandria, 67 bls. rags; E. J. Keller Co. Inc., *Exochorda,* ———, 207 bls. rags, 77 bls. bagging; Darmstadt Scott & Courtney, Argosy, Copenhagen, 5 bls. bagging scrap; ———, *Deutschland,* Hamburg, 59 bls. rags; A. H. Searle, *Quaker City,* Cardiff, 234 bls. paperstock; Great Eastern Packing & Paperstock Corp., *Quaker City,* Liverpool, 300 bls. picker waste; Loumar Textile By Products Co., *Quaker City,* Manchester, 40 bls. rags; Katzenstein & Keene, Inc., *Quaker City,* Manchester, 16 bls. rags; ———, *Quaker City,* Manchester, 170 bls. cotton waste; Irving Trust Co., *Quaker City,* Manchester, 36 bls. rags.

GLUESTOCK, ETC.

———, *Westernland,* Antwerp, 60 bags bone glue; ———, *Saturnia,* Trieste, 400 bags hide glue, 217 bags bone glue; Sorrentino & Co., *Isarco,* Naples, 448 bags ground glue.

OLD ROPE

Manufacturers Trust Co., *American Trader,* London, 56 coils; Chase National Bank, *American Trader,* London, 102 coils.

CASEIN

———, *Samaria,* Liverpool, 333 bags; T. M. Duche & Sons, *Northern Prince,* Buenos Ayres, 834 bags; ———, *Deutschland,* Hamburg, 70 bags.

CHINA CLAY

Orbis Products Trading Co., *Samaria,* Liverpool, 307 bags, 12 casks.

WOOD PULP

Gottesman & Co. Inc., *Scanpenn,* Stockholm, 450 bls. sulphite, 76 tons; J. Andersen & Co., *Scanpenn,* Stockholm, 600 bls. sulphite, 101 tons; Lagerloef Trading Co., *Scanpenn,* Helsingfors, 1016 bls. mechanical pulp, 203 tons; Lagerloef Trading Co., *Scanpenn,* Kotka, 848 bls. sulphite, 143 tons; Gottesman & Co. Inc., *Brosund, Iggesund,* 250 bls. kraft sulphate, 50 tons; Bulkley Dunton & Co., *Brosund,* ———, 3,500 bls. wood pulp 700 tons; ———, *Brosund,* Ornskoldsvik, 459 bls. chemical pulp, 75 tons; Price & Pierce, Ltd., *Etna,* Hernosand, 4,500 bls. kraft sulphate, 750 tons; Johaneson Wales & Spare, Inc., *Etna,* Gothenburg, 100 bls. sulphate; J. Andersen & Co., *Etna,* Gothenburg, 250 bls. sulphite; E. M. Sergeant Pulp & Chemical Co., *Etna,* Gothenburg, 748 bls. kraft soda pulp; Perkins Goodwin & Co., *Etna,* Gothenburg, 267 bls. sulphate pulp, 2,286 bls. kraft pulp; Gottesman & Co. Inc., *Etna,* Gothenburg, 1,500 bls. woodpulp; Bulkley Dunton & Co., *Black Gull,* ———, 840 bls. wood pulp, 168 tons; ———, *Manhattan,* Hamburg, 240 bls. wood pulp, 24 tons; ———, *Saturnia,* Trieste, 360 bls. wood pulp; Lagerloef Trading Co., *Argosy,* Helsingfors, 130 bls. mechanical pulp, 26 tons; Castle & Overton, Inc., *Argosy,* Wiborg, 1,995 bls. wood pulp, 399 tons; Lagerloef Trading Co., *Argosy, Wiborg,* 1,375 bls. mechanical pulp, 275 tons; Gottesman & Co. Inc., *Bergensfjord,* Norway, 3,000 bls. wood pulp.

WOOD PULP BOARDS

S. J. Denham, *Pr. Roosevelt,* Hamburg, 65 cs.; Jay Madden Corp., *Scanpenn,* Kotka, 125 rolls; Jay Madden Corp., *Argosy,* Kotka, 78 rolls, 93 bls.

NEWARK IMPORTS

WEEK ENDING SEPTEMBER 5, 1936

H. G. Craig Co., *Newscarrier,* Donnacona, 325 rolls newsprint.

PORTLAND IMPORTS

WEEK ENDING SEPTEMBER 5, 1936

Bulkley Dunton & Co., *Schwanheim,* ———, 250 bls. wood pulp; Price & Pierce, Ltd., *Schwanheim,* ———, 1,500 bls. unbleached kraft pulp; 300 bls. unbleached sulphite pulp; Gottesman & Co. Inc., *Schwanheim,* Sweden, 2,500 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 5, 1936

———, *Satartia,* Buenos Ayres, 417 bags casein; American British Chemical Supplies, *Satartia,* Buenos Ayres, 417 bags casein; F. S. Webster Co., *Samaria,* Liverpool, 9 cs. tissue paper; G. F. Malcolm, Inc., *Samaria,* Liverpool, 13 cs. tissue paper; ———, *Samaria,* Liverpool, 222 bags hide cuttings; Elliott Addressing Machine Co., *Shinko Maru,* Yokohama, 2 cs. paper; Union Trust Co., *Exochorda,* Alexandria, 73 bls. rags; E. J. Keller Co. Inc., *Exochorda,* ———, 319 bls. rags, 30 bls. old garments; Bulkley Dunton & Co., *Etna,* ———, 125 bls. wood pulp; Bulkley Dunton & Co., *Schwanheim,* ———, 3,310 bls. wood pulp; Price & Pierce, Ltd., *Schwanheim,* ———, 5,400 bls. unbleached sulphite; Gottesman & Co. Inc., *Schwanheim,* Sweden, 2,250 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 5, 1936

E. J. Keller Co. Inc., *Collamer,* ———, 42 bls. rags; Castle & Overton, Inc., *Collamer,* Havre, 461 bls. rags, 47 bls. newcuttings; D. Galloway, *Collamer,* Dunkirk, 65 bls. thread waste; ———, *McKeesport,* Dundee, 111 bls. paperstock; J. Andersen & Co., *Scanpenn,* Helsingfors, 600 bls. mechanical pulp, 101 tons; J. W. Hampton, Jr., & Co., *Scanpenn,* Kotka, 484 rolls newsprint; Lagerloef Trading Co., *Scanpenn,* Kotka, 930 rolls wood pulp boards, 105 tons; Jay Madden Corp., *Scanpenn,* Kotka, 167 bls. wood pulp boards, 25 tons; Chase National Bank, *Shinko Maru,* Kobe, 50 bls. rags; Corn Exchange Bank Trust Co., *Shinko Maru,* Kobe, 96 bls. rags; F. Weber Co., *Isarco,* Genoa, 9 cs. paper; Lagerloef Trading Co., *Argosy,* Wiborg, 3,494 bls. sulphite, 626 tons; Lagerloef Trading Co., *Argosy, Kotka,* 390 bls. mechanical pulp, 78 tons; Jay Madden Corp., *Argosy,* Kotka, 48 rolls, 35 bls. wood pulp boards; J. W. Hampton, Jr. & Co., *Argosy,* Kotka, 395 rolls newsprint; H. Reeve Angel & Co. Inc., *Argosy,* Kotka, 71 rolls newsprint; Johaneson Wales & Sparre, Inc., *Argosy,* Gdynia, 1,800 bls. wood pulp, 180 tons; F. Weber Co., *Quaker City,* Liverpool, 2 cs. drawing paper.

GREEN BAY IMPORTS

WEEK ENDING SEPTEMBER 5, 1936

Pagel Horton & Co. Inc., *Gudvang,* Sweden, 3,000 bls. wood pulp; Price & Pierce, Ltd., *Lysaker IV,* ———, 7,800 bls. unbleached sulphite.

SOUTH HAVEN IMPORTS

WEEK ENDING SEPTEMBER 5, 1936

Price & Pierce, Ltd., *Lysaker IV,* ———, 1,800 bls. unbleached sulphite; Price & Pierce, Ltd., *Rondo,* ———, 1,500 bls. unbleached sulphite.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 5, 1936

Congoleum Nairn Co., *Collamer,* Havre, 138 bls. rags; Congoleum Nairn Co., *Executive,* Marseilles, 392 bls. rags; W. H. Masson, *Kurama Maru,* Yokohama, 8 cs. tissue paper; ———, *Breedyk,* Rotterdam, 450 bls. wood pulp boards; Gottesman & Co. Inc., *Blankaholm,* Sweden, 450 bls. wood pulp; Price & Pierce, Ltd., *Thalatta,* ———, 1,200 bls. bleached sulphite, 3,000 bls. unbleached sulphite; Price & Pierce, Ltd., *Blankaholm,* ———, 1,050 bls. unbleached sulphite, 2,100 bls. unbleached kraft, 3,600 bls. ground wood; Gottesman & Co. Inc., *Thalatta,* Sweden, 950 bls. wood pulp; Bulkley Dunton & Co., *Thalatta,* ———, 375 bls. wood pulp; Pagel Horton & Co. Inc., *Thalatta,* Sweden, 4,050 bls. wood pulp; Pagel Horton & Co. Inc., *Blankaholm,* Sweden, 1,540 bls. wood pulp.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, September 9, 1936.

Taking the Labor Day holidays into account, trading in the local paper market was quite active during the past week. Sales forces of the leading paper organizations anticipate a brisk demand for the various grades from now until the end of the year. Prices remain unchanged.

The newsprint paper market is in a stronger position than for some time past. Advertising lineage and circulations of the leading newspapers continue to run ahead of the preceding year's record. Production in the United States, Canada and Newfoundland is proceeding in greater volume to take care of the increased consumption.

Sentiment in the fine paper market is optimistic. Demand for book, cover, bond and ledger papers is well sustained. Prices are steady to firm. Tissues are moving in good volume for the season. The course paper market is exhibiting a strong undertone. Box board is in better request with the approach of the busy season.

Mechanical Pulp

The ground wood pulp market is practically unchanged, although the trend is firmer due to the long drought experienced this summer which naturally affected the output. For the present, however, offerings of mechanical pulp are adequate. Prices are holding to formerly quoted levels.

Chemical Pulp

Steadiness prevails in the chemical pulp market. Despite the holiday, demand for the various domestic and imported grades continues persistent. Bleached sulphite pulp and kraft pulp both continue particularly strong. Other grades are fairly active. Prices are holding to schedule.

Old Rope and Bagging

The old rope market is showing signs of improvement. Paper mill demand for old manila rope is better. Mixed strings are fairly active. Old rope prices are firmer. The bagging market is displaying strength. Scrap and gunny bagging are moving in good volume. Roofing bagging is attracting more attention.

Rags

Sentiment in the domestic rag market is more optimistic. Demand for new and old white cotton rags is improving. No. 1 white shirt cuttings are in excellent request, both for domestic and foreign account. Roofing rags are seasonally active. The imported rag market is little changed.

Waste Paper

The outlook for the paper stock market is improving. With the board mills operating at 75 per cent of capacity, demand for the lower grades is gradually expanding and the price trend is upward. Old kraft machine compressed bales are firmer. Book stock is only moderately active.

Twine

No radical changes transpired in the local twine market during the past week. Now that the Labor Day holiday is over, increased demand for the various varieties is confidently anticipated.

A. E. McMaster Leaves Powell River Co.

VANCOUVER, B. C., September 5, 1936—A. E. McMaster, vice-president and general manager of the Powell River Company Limited of Vancouver, B. C., has announced his resignation after a service of fifteen years.

Mr. McMaster, previously secretary-treasurer of Whalen Pulp and Paper Mills, joined the Powell River Company as resident manager at Powell River, B. C., where the newsprint mills of the company are located, in November, 1921, and remained in that position until April, 1926, when he was appointed general manager and elected a director with headquarters in Vancouver, B. C. In April, 1934, he was also appointed vice-president, retaining the combined position until his resignation on August 19, this year.

Mr. McMaster advises that he has not yet made any definite plans for the future, proposing an extended holiday before making new connections, but with an unbounded faith in the future of the paper manufacturing industry in Canada, it is probable he will remain in that industry.

New York-Canadian Superintendents to Meet

The Fall Meeting of the New York-Canadian Division of the American Pulp and Paper Mill Superintendents Association will be held October 24 at the Hotel General Brock, Niagara Falls, Ont.

Congressman Utterback To Speak

The National Paper Trade Association is announcing with much gratification that Congressman Hubert Utterback of Iowa who was active in the framing and passage of the Robinson-Patman Bill has accepted an invitation to address the Convention to be held at the Drake Hotel, Chicago, September 21-23.

Congressmen Utterback will speak at the first general session to be held Tuesday morning, September 22, and members of the Association will be especially privileged to hear his discussion of the legislative background and his interpretive comments on the Robinson-Patman Act. In view of the widespread interest in this measure, this feature of the Convention program will be particularly timely.

Wm. F. Whiting Rites Largely Attended

HOLYOKE, Mass., September 8, 1936—The funeral of William F. Whiting of the Whiting Paper Company Wednesday of last week was marked by an outpouring of Holyoke people, hundreds not being able to gain admittance to the Second Congregational Church where the funeral exercises were held. Dr. William C. Hammond, organist of the church for 50 years, played the funeral music and Rev. Moses R. Lovell, pastor of the church and Rev. Dr. E. B. Robinson, pastor of Grace Church and a long time friend, officiated. The interment was in the mausoleum in Forestdale cemetery where Mr. Whiting's father and mother were entombed. The bearers were employees of the Whiting Paper Company.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 9, 1936.

BLANC FIXE.—Conditions in the blanc fixe market are fairly satisfactory. Prices are generally holding to schedule. The pulp is quoted at $42.50 to $45 per ton, in bulk; while the powder is selling at 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—The position of the bleaching powder market is practically unchanged. Shipments against contract are moving in good volume for the season. Prices are steady. Bleaching powder is quoted at $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN.—The casein market continues firm. Domestic standard ground is quoted at 17½ and finely ground at 18 cents; while French and Argentine standard ground are selling at 17 and finely ground at 17½ cents per pound, in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. Demand from the paper mills is fairly active for the season. Solid caustic soda is quoted at $2.55 to $2.60; while the flake and ground are selling at $2.95 to $3 per 100 pounds, in drums, at works.

CHINA CLAY.—The china clay market is exhibiting a strong undertone. Contract shipments are moving freely. Prices are firm. Imported china clay is quoted at $12.50 to $21 per ton, ship side; while domestic paper making clay is selling at $6.50 to $12 per ton, at mine.

CHLORINE.—Paper mill demand for chlorine is well sustained. The contract movement is well up to average for the time of year. Prices are holding to schedule without difficulty. Chlorine is quoted at $2.15 to $2.55 per 100 pounds, in tank cars, at works.

ROSIN.—The rosin market is little changed. Paper making gum rosin is quoted at $5.92½ and wood rosin at $6.05 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $3.03 per 100 pounds, in tank cars, at works.

SALT CAKE.—Business in the salt cake market is fairly brisk. The contract movement is normal. Prices remain unchanged. Salt cake is quoted at $12 to $13; chrome salt cake at $11 to $12 per ton, at works; while imported salt cake is selling at $12 to $13 per ton, ship side.

SODA ASH.—The soda ash market continues to display strength. Contract shipments are moving in good volume. Prices are firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH.—Influenced by the high prices of raw materials the starch market continues firm. Demand from the paper mills is seasonal. Special paper making starch is still quoted at $4 per 100 pounds, in bags; and at $4.27 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Demand for sulphate of alumina is well sustained. The contract movement is fairly heavy. Prices are steady. Commercial grades are quoted at $1.35 to $1.60; and iron free at $2 to $2.25 per 100 pounds, in bags, at works.

SULPHUR.—The sulphur market continues steady. Yearly contracts are quoted at $18 per ton, in bulk, on orders of 1,000 tons, or over, and $20 on smaller quantities. On spot and nearby car loads, the quotation is $21 per ton. All quotations are in car lots, at works.

TALC.—While most of the business transacted in the talc market is along routine lines, the outlook is fairly promising. Domestic talc is still quoted at $16 to $18 per ton, at eastern mines; while imported talc is selling at $23 to $30 per ton, on dock.

Market Quotations

Paper

Rag Content Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.50 @	8.50
No. 2 Sulphite	6.50 @	7.50
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50
Book, B Grade, Cased		
S. & S. C.	5.85 @	6.60
S. & S. C. Litho.	6.10 @	6.85
M. F.	5.60 @	6.35
No. 4 Grade		
Coated and Enamel	6.80 @	7.65
Coated Litho	6.80 @	7.65

Tissues—Per Ream—

White No. 1	.82½ @	—
White No. 1 M. G.	.77½ @	—
White No. 1½	.62½ @	—
White No. 2	.60 @	—
Anti-Tarnish M. G.	.67½ @	—
Colored	.80 @	—
Kraft	.67½ @	—
Manila	.60 @	—
Unbleached Toilet	2.60 @	3.30
Bleached Toilet	3.94 @	5.26

Paper Towels—

Unbleached	2.10 @	3.35
Bleached	3.30 @	3.70

Manila—

No. 1 Jute	9.00 @	9.25
No. 2 Jute	7.75 @	8.50
No. 1 Wood	4.00 @	5.25
No. 2 Wood	3.50 @	4.00

Fibre Papers—

No. 1 Fibre	4.25 @	5.50
No. 2 Fibre	4.00 @	4.75

(Delivered New York)

News, per ton—

Roll, contract	41.00 @	—
Sheets	46.00 @	—

Kraft—

No. 1 Northern	4.25 @	4.75
Standard	4.12½ @	—
Southern	4.00 @	—

Boards per ton—

News	30.00 @32.50
Chip	30.00 @32.50
Sgl. Mla. Ll. Chip	47.50 @50.00
Jute Lined Chip	47.50 @50.00
Kraft Liners	62.50 @65.00
White Pat. Coated	55.00 @60.00
Binders Boards	67.00 @75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—

Moist	24.00 @25.00
Dry	24.00 @25.00

(Delivered)

No. 1 Domestic and Canadian	27.00 @28.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—

Division 1	2.70 @	3.30
Division 2	2.65 @	2.75
Division 3	2.60 @	2.70

Prime Qualities—

Class 1. All Prime Easy Bleaching	2.05 @	2.10

Other Than Easy Bleaching—

Class 2. Higher than Standard	2.00 @	2.05
Class 3, Standard	1.95 @	2.00
Class 4, Lower than Standard	1.90 @	1.95

(On Dock, Atlantic Ports)

Kraft Bleached	3.00 @	3.25
Kraft Light & Strong	2.10 @	2.20
Kraft No. 1	1.85 @	2.10
Kraft No. 2	1.70 @	1.85

(F. o. b. Pulp Mill)

Kraft Domestic	1.80 @	2.00

(Delivered)

Soda Bleached	2.60 @	—

* Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	7.50 @	7.75
Silesias No. 1	5.50 @	5.75
New Unbleached	8.25 @	8.50
New Soft Blacks	3.75 @	4.00
Blue Overall	6.50 @	6.75
Fancy	3.00 @	3.25
Washables	2.25 @	2.50
Mixed Khaki Cuttings	3.50 @	3.75
O. D. Khaki Cuttings	4.25 @	4.50
Men's Corduroy	2.00 @	2.25
New Mixed Blacks	2.75 @	3.00

Old Rags

White, No. 1—		
Repacked	3.25 @	3.50
Miscellaneous	2.75 @	3.00
White, No. 2—		
Repacked	2.25 @	2.50
Miscellaneous	1.75 @	2.00
Thirds and Blues—		
Repacked	2.00 @	2.25
Miscellaneous	1.90 @	2.00
Roofing Rags—		
No. 1	1.75 @	1.80
No. 2	1.15 @	1.25
No. 3 (bagging)	1.10 @	1.15
No. 4	1.10 @	1.15
No. 5A	.80 @	.90

Foreign Rags

New Rags

New Dark Cuttings	2.25 @	2.50
New Mixed Cuttings	2.00 @	2.25
New Light Silesias	4.50 @	5.00
Light Flannelettes	4.50 @	5.00
New White Cuttings	7.00 @	7.50
New Light Oxfords	4.00 @	4.50
New Light Prints	3.00 @	3.25

Old Rags

No. 1 White Linens	7.50 @	8.00
No. 2 White Linens	6.50 @	7.00
No. 3 White Linens	4.50 @	5.00
No. 4 White Linens	2.25 @	2.50
No. 1 White Cotton	4.25 @	4.75
No. 2 White Cotton	3.25 @	3.75
No. 3 White Cotton	2.50 @	2.75
No. 4 White Cotton	1.90 @	2.15
Extra Light Prints	2.00 @	2.25
Ord. Light Prints	1.75 @	1.85
Med. Light Prints	1.55 @	1.65
Dutch Blue Cottons	2.25 @	2.50
French Blue Linens	3.50 @	4.00
German Blue Linens	2.50 @	2.75
German Blue Cottons	2.00 @	2.25
Checks and Blues	2.00 @	2.25
Linsey Garments	2.15 @	2.25
Dark Cottons	1.90 @	2.10
Old Shopperies	1.75 @	2.00
New Shopperies	1.75 @	2.00
French Blues	2.25 @	2.50

Old Rope and Bagging

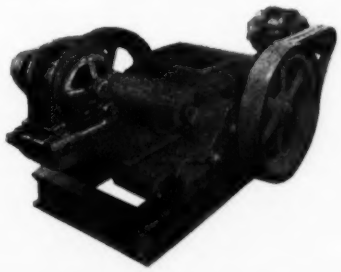
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	2.10 @	2.15
Domestic	1.75 @	1.85
Wool Tares, light	1.50 @	1.75
Wool Tares, heavy	1.85 @	2.05
Bright Bagging	1.70 @	1.75
Manila Rope—		
Foreign	2.40 @	2.60
Domestic	2.25 @	2.50
Mixed Strings	1.10 @	1.15
New Burlap Cut	2.75 @	3.00
Hessian Jute Threads—		
Foreign	3.00 @	3.25
Domestic	2.80 @	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—		
White Envelope Cuttings	2.55 @	2.65
Ordinary Hard White No. 1	2.25 @	2.35
Hard White No. 2	2.10 @	2.20
Soft White No. 1	1.95 @	2.05
Flat Stock—		
Stitchless	.65 @	.75
Over issue Mag	.65 @	.75
Solid Flat Book	.55 @	.60
Crumpled No. 1	.35 @	.40
Solid Book Ledger	1.50 @	1.65
Ledger Stock	.85 @	.90
New B. B. Chips	.30 @	.35
Manilas—		
New Env. Cut	1.75 @	1.85
New Cuttings	1.35 @	1.45
Bogus Wrapper	.40 @	.50
Old Kraft Machine—		
Compressed bales	1.15 @	1.30
News—		
No. 1 White News	1.15 @	1.25
Strictly Overissue	.50 @	.60
Strictly Folded	.40 @	.45
No. 1 Mixed Paper	.35 @	.40



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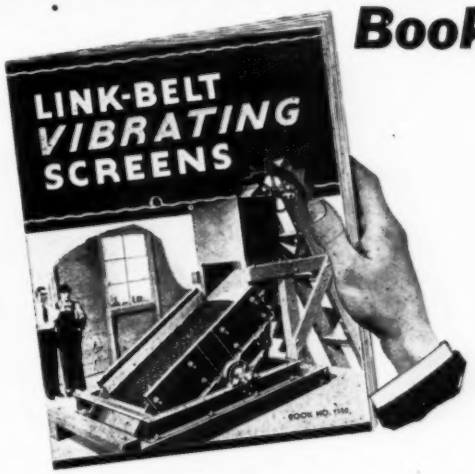

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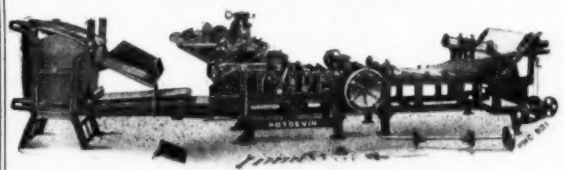
POTDEVIN
PAPER BAG MACHINERY



POTDEVIN SACK MACHINE
FOR SHOPPING (CARRY-ALL) BAGS
also CEMENT, FUEL, POULTRY & FLOUR SACKS

POTDEVIN MACHINE CO.

1223 38th ST. BROOKLYN, N. Y.
Established 1893 Tel. WIndsor 6-1700

HIGHEST GRADE
CLAYS

PAPER MAKERS IMPORTING CO. INC. EASTON, PENNSYLVANIA U.S.A.

COATING FILLING

POWDERED

Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.13¼	@	.15¾
Belg. White Hemp	.14¼	@	.17¾
India Compress	.13¾	@	.14¾
Fine Polished—			
Fine India	.21½	@	.23½
Special	.19½	@	.21½
Unpolished—			
Box	.12	@	.12½
Paper Makers	.09	@	.13½
Tube Rope	.10	@	.15½
Wall Paper	.11	@	.14½
Wrapping	.15½	@	.21
Special	.15	@	.15½
Soft Fiber Rope	.12½	@	.12¾

(Hard Fibre)

Bond	.09½	@	.18
Anchor	.09	@	.10½
Manila	.21	@	.28

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.40
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.07¼
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¾
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	42.00	@	—
Sheets, open	47.00	@	—
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent Coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.60	@	.70
Solid Books	.50	@	.60
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.40	@	.50
Overissue News	.40	@	.45
Old Newspapers—			
No. 1 Folded News	.42½	@	.45
No. 1 Mixed Paper	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

Rag Content Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, M. F.	5.00	@	—
Book, S. S. & C.	5.25	@	—
Book, Coated	6.15	@	—
Coated Lithograph	6.15	@	—
No. 1 Jute Manila	10.50	@	—
Manila Sul., No. 1	6.75	@	—
Manila No. 2	4.25	@	—
No. 1 Kraft	6.00	@	—
Southern Kraft	5.00	@	—
News Print Rolls	40.00	@	—
Straw Board	40.00	@	45.00
News Board	40.00	@	—
Chip Board	37.50	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1.	.08	@	.08½
New White, No. 2.	.04½	@	.05
Light Silesias	.05½		—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft.	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1.	.02	@	.02½
Blue Overall	.06	@	.06½
Cottons—According to grades—			
Washable, No. 2.	.02½	@	.04½
New Blue	.01¾	@	.02¼
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03½	@	.04
New Dark Seconds	1.75	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03½	@	.04
Corduroy	.02	@	.02¼
New Canvas	.04	@	.04½
New Black Mixed.	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	—
Repacked	2.25	@	2.50
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	1.50	@	—
Domestic No. 2	1.40	@	—
Roofing bagging	1.10	@	—

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	2.25	@	2.50
Sisal Rope	2.00	@	2.25
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.00	@	2.50
No. 2	.90	@	1.00
Wool Tares, heavy	3.00	@	3.25
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.20
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.40	@	1.45
No. 1 Mixed	—	@	.85
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.15	@	1.20
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.65	@	.70
Manila Cuttings	1.80	@	1.90
Print Manila	.55	@	.60
Container Manila	.55	@	.60
Kraft Paper	1.10	@	1.20
No. 1 Mixed Paper	.45	@	.50
Straw Board Chip	.40	@	—
Binders Board Chip	.40	@	—
Corrugated Board	.60	@	.65
Overissue News	.60	@	—
Old Newspapers	.40	@	—

BOSTON

Paper

Rag Content Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
No. 1 Sulphite	7.50	8.50
No. 2 Sulphite	6.50	7.50
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¼	@	—
No. 2 Kraft	.04½	@	—

(Delivered New England points)

Southern Kraft	.04	@	—
News Print Rolls	39.50	@	—
Straw Board, rolls	.009	—	@35.00
Filled News Board	40.00	@	45.00
Chip Board	37.50	@	40.00
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated News Board (Bender)	55.00	@	65.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	67.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.00	@	2.10
No. 1 Soft White	1.75	@	1.85
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.60	@	.70
No. 1 Books, light	.50	@	.60
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.50	@	1.60
No. 1 Old Manila	.60	@	.65
White Blank News	1.10	@	1.15
No. 1 Kraft	1.05	@	1.12½
Mixed Papers	.35	@	—
Print Manila	.55	@	.60
Container Manilas	.27½	@	—
Old Newspapers	.40	@	.42½
Overissue News	.50	@	—
Box Board Chips	—	@	.25
Corrugated Boxes	.47½	@	.50
Kraft corrugated boxes	.95	@	1.00
Screening Wrappers	.40	@	.45

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.40	@	2.50
Domestic	2.50	@	—
Transmission Rope	1.20	@	1.30
Jute Rope	2.12½	@	2.25
Jute Carpet Threads	1.00	@	1.10
Gunny No. 1—			
Foreign	1.90	@	2.00
Domestic	1.75	@	1.80
Bleachery Burlap	4.25	@	4.50
Scrap Burlap—			
Foreign	1.90	@	2.00
Domestic	1.60	@	1.75
Scrap Sisal	1.90	@	2.00
Scrap Sisal for Shredding	2.10	@	2.25
Wool Tares, heavy	1.90	@	2.00
New Burlap Cuttings	2.00	@	2.25
Australian Wool Pouches	2.35	@	2.50
Heavy Baling Bagging	1.85	@	2.20
Paper Mill Bagging	1.65	@	1.70
Bagging No. 2	1.10	@	1.25

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.01¾	@	.02
New White No. 1	.07	@	.07½
New White No. 2	.04	@	.04¼
Silesias No. 1	.05	@	.05½
New Black Silesias	.03½	@	.04¼
Soft Unbleached	.07¼	@	.07¾
Blue Cheviot	5.50	@	6.00
Fancy	.02½	@	.02¾
Washable	.0165	@	.0170
Cottons—According to grades—			
Blue Overalls	5.50	@	6.00
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.03¾	@	.04¼
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	—	@	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Thirds and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.45	@	1.50
No. 2	1.25	@	1.35
No. 3	1.15	@	1.25

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.70	@	2.00
New White Shirt Cuttings	6.50	@	6.75
Dutch Blues	2.25	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.75	@	1.90
Old Linsey Garments	2.12½	@	2.37½
New Silesias	5.00	@	5.75

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.11	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.12	@	—
No. 2 Colored	.09	@	—
Ledgers			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.50	@	—
No. 2 M. F. (Carloads)	6.00	@	—
No. 3 M. F. (Carloads)	6.00	@	—
No. 1 S. C. (Carloads)	7.00	@	—
No. 2 S. C. (Carloads)	6.50	@	—
No. 3 S. C. (Carloads)	6.50	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown	4.75	@	—
White Wrap	3.50	@	—
"B" Manila	4.80	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
Kraft, No. 2	5.40	@	—

(F. o. b. Cars Toronto)

News, per ton—			
Rolls (contract)	40.50	@	—
Sheets	45.00	@	—

Pulp

Ground wood	27.00	@	—
Unbleached Sulphite	42.00	@	—
Book (Class 1)	58.00	@	—
Writing (Class 2)	59.00	@	—
Select (Class 3)	60.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.25
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.80	@	.90
Light and Crumpled Book Stock	.70	@	.80
Ledgers and Writings	.90	@	1.00
Manilas—			
New Manila Cut	1.25	@	1.40
Printed Manilas	.50	@	—
Kraft	1.00	@	1.60
News and Scrap—			
Strictly Overissue	.55	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.07½	@	.07¾
Fancy Shirt Cuttings	.02¼	@	.03